Needs Assessment for a Home-based Physical Activity Program for Mid-life African American Women with Chronic Health Conditions in an Underserved Healthcare Setting: A Quality Improvement Project

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Abstract

Only 21% of U.S. adults meet the U.S. Department of Health and Human Services (HHS) 2008 Physical Activity (PA) Guidelines. African Americans (AA) are less likely to meet PA guidelines despite higher rates of chronic health conditions that benefit from regular PA. To understand how to best engage patients in their own health promotion behaviors, healthcare providers must first understand the needs and preferences of specific patient populations for these activities. The aim of this project was to conduct a needs assessment regarding the feasibility and acceptability of a home-based PA program for underserved mid-life AA women diagnosed with at least one of four chronic conditions, who receive healthcare in an urban primary care clinic. Qualitative and quantitative data were gathered to assess the population's current PA level and benefits and barriers to exercise. Interviews with 16 women were centered on their review of pictures of the home-based PA program, focusing on interest in completing the exercises. The staff interviews focused on their perceptions of the home-based PA program, the fit into usual care, and what type of delivery model for the exercise would best suit the clinic's and patients' needs. The needs assessment confirms that a home-based PA program in mid-life AA women with chronic health conditions is feasible and acceptable. The identification of barriers to PA and feedback from staff focus groups will guide the development of a tailored home-based PA program and future initiatives to support PA. Increasing PA will enhance self-management of chronic health conditions, support healthy lifestyle behaviors, and improve health outcomes.

Keywords: physical activity, chronic disease, African American women, home-based physical activity program, physical activity interventions

Chapter 1: Nature of the Project

Introduction

The goal of Healthy People 2020 is to achieve health equity, eliminate disparities, and improve the health of all groups (Office of Disease Prevention and Health Promotion, 2016a). The Healthy People 2020 report highlights that health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group, religion, socioeconomic status (SES), gender, age, mental health, disabilities, sexual orientation, and geographic location. Further, social determinants of health are conditions in the social, physical, and economic environment in which people are born, live, work, and age (U.S. Department of Health & Human Services [HHS], 2010c). Achieving optimal health requires more than just controlling disease. Health outcomes in part are significantly influenced by the choices that people can make about healthy lifestyles (e.g., adequate nutrition, physical activity). Thus, recognizing the impact that social determinants have on health outcomes of a specific population is key to supporting individuals to attain optimal health. Interventions that take into account the social determinants of health will help address the factors that are root causes of disease and impact many different health and disease outcomes.

Only 21% of all U.S. adults meet the 2008 Physical Activity Guidelines as set forth by the U.S. Department of Health and Human Services (HHS, 2008). When examining Centers for Disease Control and Prevention (CDC) data for physical activity by race and ethnicity, Shuval et al. found that African Americans were less likely to meet public health recommendations than were whites, 36.4% and 52.2% respectively (Shuval et al., 2013). This disparity might stem from a variety of factors for which race is a proxy variable; e.g., a lack of culturally appropriate interventions, or differences in physical activity (PA) self-efficacy and knowledge, income,

education level, physical and built environment, social support, or neighborhood social cohesion (Larsen-Gordon, Nelson, Page, & Popkin, 2006; Powell, Slater, & Chaloupka, 2004; Powell, Slater, Chaloupka, & Harper, 2006; Marshall et al., 2007). In parallel with the decreased likelihood of meeting PA guidelines, the prevalence of some chronic diseases is also higher among African Americans than whites (Shuval et al., 2013). Enhanced interventions in diverse populations to improve health outcomes must consider the complexity of factors influencing variability in physical activity and health outcomes.

In 2004, within a social determinants of health perspective, the Columbus Health Department (CHD) embarked on a Healthy Neighborhoods project to improve community health in diverse populations on the east side of Columbus, Ohio. The Near East Community can be defined as zip codes 43203 and 43205, located to the East of downtown Columbus, Ohio. Near East population characteristics in 2004 survey of health needs reported that the Near East community was predominantly (83%) African American, median household income of approximately $36,000 (37% below federal poverty level), and 68% of the population older than age 25 had a high school diploma or higher (CHD, 2004). In comparison to Franklin County, the Near East community had a higher rate (88.6%, compared to 74% for Franklin County) of hospitalizations due to diseases such as diabetes and hypertension (CHD, 2004). Deaths from chronic disease were similar to, or only slightly higher than Franklin County and Ohio. However, for diabetes mellitus, in 2004, the Near East community death rate from diabetes-related complications was twice that of Franklin County and Ohio overall.

Updated population characteristics in zip codes 43203 and 43205 were reviewed on the U.S. Census Bureau. The Near East community remains predominantly African American, 81.9% and 71.2% respectively (U.S. Census Bureau, 2010). The median household income was

$20,904 for zip code 43203 and $30,491 for zip code 43205. Additionally, 84.1% of adults ages 18 and older in zip code 43205 had a high school diploma or higher and 85.4% in zip code 43203 (U.S. Census Bureau, 2010). Data analysis by the Office of Epidemiology at the CHD indicate that all-cause and disease-specific mortality rates in the Near East area (zip codes: 43203, 43205, and 43206) are not statistically different than those of Franklin County (years 2011-2015) (D. McClure, email communication, February 17, 2017). Similarly, the prevalence of diabetes, hypertension, and hyperlipidemia in the Near East area are also not statistically different than those in Franklin County (D. McClure, email communication, February 17, 2017).

Interviewees for the 2004 report described two factors that may explain the relatively high diabetes death rate. First, many community representatives reported that residents view diabetes as an "inevitable part of life" and getting older; thus, averting them from making efforts to prevent the onset of diabetes or seek treatment until they have complications. Secondly, a relatively low diagnosis rate of diabetes (9%) on a community survey suggested that the disease may be underdiagnosed among Near East residents (CHD, 2000). Additionally, within the Near East population, 32% smoked, 66% were overweight, 30% had high cholesterol, 36% had been diagnosed with hypertension, and only 13% got at least 30 minutes of moderate exercise 5-7 days per week (CHD, 2004). Health concerns addressed in this report included: access to health services, chronic disease, maternal and child health, mental health, and substance abuse.

More recently, in 2013, the Ohio State University (OSU) College of Nursing and OSU partners established the OSU Total Health & Wellness Clinic (THWC) that is located in the Near East community where the medically-underserved target population receives most healthcare services. The OSU THWC is a nurse practitioner-led comprehensive primary care practice located at University Hospital East. The clinic offers an interprofessional team approach

(TEAMcare) to integrated physical and mental health care for people across the life span based on the key health needs of the Near East community. The team consists of family nurse practitioners (FNPs), psychiatric mental health nurse practitioners, mental health counselors, pharmacists, dietitians, social workers, nursing, and other health science students. The THWC patient population profile demographics include: (1) 51% African American; (2) more women than men, 749 and 555 respectively, among patients 25 to 69 years of age; and (3) a diverse payer mix in the age18 and older population that is served by the THWC, including 264 patients uninsured, 590 patients with Medicaid, and 197 patients with Medicare. Within the overall THWC patient population, there are currently 501 women ages 40 to 69. Multiple common chronic health conditions are managed in the THWC, including diabetes, hypertension, hyperlipidemia, and depression.

Chronic diseases are among the most common, costly, and preventable of all health problems (Centers for Disease Control and Prevention [CDC], 2016). Health promotion activities such as physical activity (PA) and healthy diet can help to prevent the onset and severity of chronic diseases, and otherwise is highly effective in managing the four most prevalent chronic health conditions seen at the THWC to reduce the likelihood of adverse outcomes. The U.S. Preventive Services Task Force (USPSTF) recommends offering or referring adults who are overweight or obese and have additional cardiovascular disease (CVD) risk factors to intensive behavioral counseling interventions to promote a healthful diet and PA for CVD prevention (Grade B evidence) (U.S. Preventive Services Task Force [USPSTF], 2015). However, as engagement in healthy diet and physical activity relies upon people themselves engaging in these self-management activities to promote personal health, individuals with chronic conditions must be adequately informed, motivated, and committed to self-care in partnership with their

important others, including their health care providers. To understand how to best engage patients in their own health promotion behaviors, healthcare providers need to first understand the needs and preferences of specific patient populations and individuals for these activities.

DNP Project Purpose and Overview

The purpose of this project completed in partial fulfillment of the requirements for a Doctorate of Nursing Practice (DNP) degree was to conduct a needs assessment regarding the feasibility and acceptability of a home-based physical activity program for underserved mid-life African American women (aged 40 to 70 years), diagnosed with at least one of four chronic conditions (hypertension, diabetes, hyperlipidemia, depression), who receive healthcare in an urban primary care clinic (Total Health and Wellness Clinic; THWC). This DNP quality improvement project utilized a descriptive cross-sectional mixed methods observational design that was guided by the Social Cognitive Theory (SCT). Participants in the project included the THWC staff (n = 8) and a convenience sample of 16 midlife women who received healthcare at the THWC who had at least one of the four chronic health conditions. Patients completed questionnaires about their current PA levels and perceived benefits and barriers to exercise. Semi-structured interviews with the patient sample focused on the women's perceptions of a specific home-based, evidence-based, public domain physical activity (PA) program from the National Institute of Aging at the National Institutes of Health (Go4Life; https://go4life.nia.nih.gov). Women were interviewed about their perceptions of PA exercises using laminated cards that include professionally-produced pictures of women demonstrating home-based physical activities, of similar personal characteristics to the THWC population (e.g., age, race/ethnicity). Semi-structured interviews with the THWC staff were focused on staff perceptions of the home-based PA program, the fit into usual care, and the best mode of delivery.

Significance of Project to Nursing and Healthcare

A holistic approach is important to optimizing personalized healthcare for populations that are disproportionately impacted by disparities in health and healthcare access. An evidence-based approach to clinical practice to support health promotion activities can produce significant improvements in health, safety, and cost outcomes (Melnyk & Fineout-Overholt, 2015). Similarly, the goal of improving healthcare through enhancing the experience of care, advancing the health of populations, and reducing costs of care has become known as the Triple Aim—a major focus of current healthcare system improvement efforts across the United States (Institute for Healthcare Improvement [IHI], 2016). As healthcare delivery evolves from a volume to value-based healthcare system in which quality is prioritized over quantity of care, enhanced strategies to further improve health outcomes are needed.

The needs assessment to evaluate the feasibility and acceptability of a home-based, evidence-based PA program for midlife women with chronic health conditions who are patients at the THWC was completed because of the potential to favorably impact health outcomes and to improve the quality of holistic care that is provided at the THWC. The tailored approach to PA and change in usual clinical practice for counseling patients about PA has the potential to enhance self-management of chronic diseases for which outcomes depend substantially upon implementation of self-managed lifestyle behavior changes. Support of patient self-management is a key component of effective chronic illness care and improved outcomes (Cole & Newton, 2005). Ideally, as the recommendations for PA are met by the patients, their chronic disease management may improve (USPSTF, 2015; Ford, Bergmann, Boeing, Li, & Capewell, 2012; CDC, 2014). The needs assessment is a step in the foundation for a clinical practice change. Establishing a personalized approach to engage patients in healthy lifestyle behaviors will assist

the THWC staff in management of chronic disease in their patient population. The practice change provides the clinic staff a potential enhancement to existing counseling for patients and provides additional resources to support PA.

At a broader level, healthcare costs have the potential to decline if chronic disease management improves. As chronic diseases are better managed, the number of preventable hospitalizations, emergency department use, and managed care costs are anticipated to decrease. Additionally, the costs associated with the home-based PA program implementation are expected to be minimal, as the existing resources of the home environment can be used to accomplish PA without additional costs to patients or the healthcare system. In a values-based healthcare system, value can be defined as maximum health benefit at minimum cost and operationally, better health outcomes, processes of care, patient experience and reduced costs (Conrad, 2015). The needs assessment that was conducted gathered data on feasibility and acceptability of an intervention that has significant potential to improve the health of individuals in the target population at minimal cost.

Chapter 2: Review of Literature

Physical Activity

The health benefits of PA are well documented. PA decreases overall mortality rates and the risks for cardiovascular diseases (CVD), several cancers, diabetes mellitus, hypertension, osteoarthritis, osteoporosis, obesity, and depression (HHS, 1996; Office of Disease Prevention and Health Promotion, 2016c). Completing 150 minutes of at least moderate-intensity aerobic PA a week will lower the risk of premature death (HHS, 2008). Regularly active adults have lower rates of heart disease and stroke and have lower blood pressure and lipid profiles. Individuals who regularly engaged in at least moderate-intensity aerobic activity have a

significantly lower risk of developing type 2 diabetes than do inactive people. Additionally, PA helps people maintain a stable weight overtime. The decline in bone density that happens during aging can be slowed with regular PA. Similarly, progressive muscle-strengthening activities increase or preserve muscle mass, strength, and power. Lastly, PA may improve the quality of sleep and lower the risk of depression and cognitive decline. Mental health benefits have been found in people who do aerobic or a combination of aerobic and muscle-strengthening activities three to five days a week for 30 to 60 minutes at a time (HHS, 2008).

According to the CDC (2016), for substantial health benefits, adults should do at least 150 minutes a week of moderate-intensity, or 75 minutes a week of vigorous-intensity aerobic PA, or an equivalent combination of moderate and vigorous intensity aerobic activity (Office of Disease Prevention and Health Promotion, 2016b). The U.S. Preventive Services Task Force (USPSTF) recommends offering or referring adults who are overweight or obese and have additional cardiovascular disease (CVD) risk factors to intensive behavioral counseling interventions to promote a healthful diet and PA for CVD prevention (Grade B evidence) (USPSTF, 2015).

Conversely, insufficient PA is a risk factor for death related to cardiovascular disease and cancer. Insufficient PA is also a risk factor for diabetes, hypertension, dyslipidemia, obesity, myocardial infarction, stroke, osteoporosis, osteoarthritis, colon cancer, and depression (HHS, 2008). Despite the proven benefits of PA, only 21% of all adults meet the 2008 Physical Activity Guidelines as set forth by the U.S. Department of HHS (CDC, 2014). More specifically, large national surveys have revealed that women are less likely to be physically active than men (HHS, 1996). Women are less likely (46%) than men (54%) to meet the 2008 PA guideline for aerobic activity (CDC, 2014). Similarly, younger adults are more likely to meet the PA guidelines for

aerobic activity than older adults. Additionally, African Americans were 36% more likely than whites to report no PA (HHS, 2002). Furthermore, adults with more education are more likely to meet these guidelines than adults with less education, and families whose income above poverty level are more likely to meet the physical activity guidelines than adults whose family income is at or near the poverty level (CDC, 2014).

Chronic Disease

Chronic diseases such as heart disease, cancer, and diabetes are the leading causes of disability and death in the United States (HHS, 2002). As of 2012, about half of all adults had one or more chronic health conditions and one of four adults had two or more chronic health conditions (Ward, Schiller, & Goodman, 2014). Additionally, chronic diseases cause major limitations in daily living for more than 25 million people (HHS, 2002). Non-Hispanic black adults are at least 50% more likely to die of heart disease or stroke prematurely. The prevalence of adult diabetes is higher among non-Hispanic blacks than non-Hispanic whites as well as higher among adults without college degrees and those with lower household incomes (CDC, 2013). Likewise, higher income women are less likely to be obese than low-income women (HHS, 2010a). Although chronic diseases are among the most prevalent and costly health problems, they are also among the most preventable. Unhealthy behaviors such as tobacco use, lack of PA, and poor eating habits are major contributors to chronic disease (CDC, 2016).

Health Disparities

Health disparities are described as differences in health care processes or health outcomes between groups (Kaiser Permanente Institute for Health Policy, 2007). To augment, Healthy People 2020 state health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group, religion,

socioeconomic status (SES), gender, age, mental health, disabilities, sexual orientation, and geographic location (Office of Disease Prevention and Health Promotion, 2016). Racial and ethnic minority populations often receive poorer quality of care and face more barriers in seeking care, including preventive care and chronic disease management, than do non-Hispanic whites; thus, these disparities can lead to poor health outcomes and higher healthcare costs (CDC, 2015b). The disparities described above may result from various social determinants of health. The key determinants of population health can be categorized into biology and genetics, individual behavior, social environment, physical environment, and built environment (HHS, 2010b).

Barriers to Physical Activity

Barriers to PA among underserved populations who experience health disparities have been studied and are important considerations in designing PA programs that are more likely to be implemented based on working around population-specific barriers. In a qualitative study by Shuval et al. (2013), barriers to PA were found on both individual and socioenvironmental levels. Individual impediments included fatigue, lack of motivation, time, and health ailments. Socioenvironmental factors inhibiting daily PA consisted of lack of exercise facilities and parks and neighborhood crime (Shuval et al., 2013). In another study, focus groups were held with 48 predominantly low-income, urban, African American women to explore cultural, environmental, and policy determinants of PA to inform the development of exercise interventions for preventing cardiovascular disease (Wilbur, Chandler, Dancy, Choi, & Plonczynski, 2002). Lack of community support and scarcity of role models were cultural influences that discouraged them from being exercisers. The women also felt safety was an issue and expressed that African American women were not provided the same protection to exercise freely in their communities

as women from the dominant culture. Environmental factors impeding PA included fear of drug and crime ridden neighborhoods and poor accessibility to indoor activities. Lastly, policy development focused on safety issues, cost, availability, and community input. Examples included increased security in their neighborhoods with increased police presence, affordable rates at facilities offering exercise programs, extended hours of operation at these facilities, and enhanced policies to ensure community input into development and implementation of PA programs (Wilbur et al., 2002).

Likewise, King et al. (2000) explored personal and environmental barriers to PA among a U.S. population-derived sample of women 40 years of age and older. Within this sample, the American Indian-Alaskan Native and African American subgroups had the largest percentage of women falling within the inactive category. Among the African American subgroup, perceived barriers consisted of but not limited to lack of time, caregiving duties, lack of energy, inadequate safe places to exercise, and poor health (King et al., 2000). Correspondingly, Baruth, Sharpe, Parra-Medina, and Wilcox (2014) describes barriers to exercise through focus groups with primarily African American women (93%) recruited from urban neighborhoods of high poverty in the southeastern United States. Personal barriers included lack of motivation, not seeing quick results, not having fun with exercise, body image issues, and health conditions. Social constraints included demands on their time, lack of energy, and role strain. Environment impediments consisted of safety issues, neighborhood violence, traffic, lack of access to facilities, and cost of gym memberships (Baruth et al., 2014). As documented in the existing literature, urban African American women have been shown in studies to be less active and to have a higher prevalence of chronic disease and obesity. Therefore, it is a priority to enhance existing approaches to promote PA in this population. The consistency of documented barriers to PA suggests that these factors

should be addressed in behavior-change interventions aimed at increasing exercise (Ashe, Miller, Eng, & Noreau, 2009).

Physical Activity Interventions

Whitt-Glover & Kumanyika (2009) conducted a systematic review to identify characteristics of effective interventions designed to increase PA among African Americans. Intervention settings for adult participants included churches, community locations such as YMCAs, community centers, and healthcare settings. Methods used to assess PA varied from accelerometer, pedometer, and fitness tests to questionnaire methods. PA interventions consisted of counseling to increase PA, supervised classes, home-based exercise programs, walking programs, and motivational interviewing (Whitt-Glover & Kumanyika, 2009). The authors concluded several common factors that appear to influence the effectiveness of interventions designed to increase PA among African Americans. These factors included assessment of PA using an objective measure, provision of specific goals for PA for participants, and inclusion of structured PA or exercise programs (Whitt-Glover & Kumanyika, 2009).

Jenkins, Jenkins, Gregoski, & Magwood (2015) identified intervention strategies and outcomes in studies designed to promote PA in African American women from 2000-2015. Intervention strategies included culturally tailored interventions, faith-based interventions, home-based PA programs, group-based program, and individually tailored programs. Other strategies included face-to-face sessions, telephone sessions, a combination of both, and peer support (see Literature Summary Table 1). The majority of culturally tailored interventions revealed significant or mixed changes in PA (Jenkins et al., 2015). Utilizing a structured nutrition and PA assessment and counseling program, Scarinci et al. (2014) found a significant change in PA engagement at 12 months (24% increase) as compared to screening arm (3% increase). However,

there was a 16% decrease in PA from baseline at 24 months in the healthy lifestyle group.

Gaston, Porter, & Thomas (2007) evaluated the effectiveness of Prime Time Sister Circles (PTSC), a curriculum-based, culture and gender specific health intervention, in assisting mid-life African American women to decrease the major risk factors of physical inactivity, poor nutrition, and stress. There were significant changes in self-reported PA from pretest to posttest. Additionally, in 2011, Parra-Medina et al. evaluated a theory-based lifestyle intervention targeting PA and dietary fat intake among African American women at high risk for CVD. The culturally appropriate intervention consisted of telephone calls, printed materials, and motivational, ethnically tailored newsletters. Results revealed the intervention participants were significantly more likely than were those in the comparison group to decline in total PA at six months, but also significantly more likely to improve in leisure-time PA (Parra-Medina et al., 2011). Lastly, in a culturally appropriate, church-based community intervention to reduce obesity related outcomes in African American females, exercise in minutes was significantly higher from baseline to 12 and 24 weeks (Christie, Watkins, Weerts, Jackson, & Brady, 2010).

Few faith-based interventions were identified. Of these, mixed results were reported (Jenkins et al., 2015). Peterson & Cheng (2011) tested the feasibility of the church-based Heart and Soul Physical Activity Program (HSPAP) in promoting PA in urban mid-life African American women. The HSPAP was delivered in one 2-hour session each week for six weeks. The total minutes of PA per week increased from a mean of 412 minutes per week at baseline to a mean of 552 minutes per week within six weeks (Peterson & Cheng, 2011). Moreover, Duru, Sarkisian, Leng, & Mangione (2010) conducted a randomized-control trial to evaluate Sisters in Motion, a faith-based intervention intended to increase walking among older, African American women. At six months, there was a significant difference in weekly steps between the

intervention and control group (Duru et al., 2010). Finally, a study was conducted to determine whether African American women receiving a PA intervention with spiritual strategies compared to a control group would demonstrate differences in PA behaviors and biomarkers, self-efficacy for PA, and barriers to PA (Anderson & Pullen, 2013). Results revealed a significant difference between group findings at 12 weeks on muscle strength activity, favoring the intervention group.

Home-based PA programs were reviewed, yielding mixed results and significant changes in PA and PA adherence (Jenkins et al., 2015). Wilbur, Miller, Chandler, & McDevitt (2003) conducted a study to determine adherence to a 24-week home-based walking program. Outcomes included a 66.5% adherence rate of expected walks; however, adherence was higher for Caucasian women than African American women, 71.5% and 56% respectively. A pilot study of a home-based motivation exercise program for African American breast cancer survivors found a significant increase in total minutes per week of PA as well as an increase in moderate to vigorous activity (Spector, Deal, Amos, Yang, & Battaglini, 2014). Wilbur et al. (2008) utilized a quasi-experimental design to determine the effectiveness of a home-based walking intervention enhanced by behavior strategies targeted to African American women on adherence, PA, fitness, and body composition compared to minimal treatment. Adherence was significantly higher in the enhanced treatment group than the minimal treatment group and was related to the number of workshops attended. Finally, Pekmezi et al. (2013) conducted a mixed methods design consisting of 11 focus groups to define PA barriers and obtain feedback to guide an intervention. Following the focus groups, the Home-Based Individually Tailored Physical Activity Print (HIPP) intervention was developed. With a trial population of ten, increases were seen in readiness for PA as well as reported greater PA from baseline to one month, 89 minutes/week to 155 minutes/week respectively (Pekmezi et al., 2013).

Because many types of PA programs exist ranging from simple home exercise programs to intense highly supervised center based programs, a Cochrane review was conducted to assess the effectiveness of "home-based" versus "center-based" PA programs on the health of older adults who have one or more of the following: existing cardiovascular (CV) disease, one or more risk factors for CV disease, chronic obstructive pulmonary disease (COPD), and osteoarthritis (Ashworth, Chad, Harrison, Reeder, & Marshall, 2005). In the largest and highest quality study, King (1991) compared the effectiveness of, and adherence to, group versus home-based exercise training regimens among a large, community based sample of health, sedentary men and women of advanced middle age. Participants in the higher and lower intensity home-based PA program reported significantly greater adherence, 78.7% +/- 33.9% and 75.1% +/- 31.8% respectively, than those in group-based training (52.6 +/- 29.8%) (King, 1991). Furthermore, The Sedentary Women Exercise Adherence Trial (S.W.E.A.T.) evaluated the effectiveness of a 6-month supervised center-initiated exercise program compared to an unsupervised home-based program on the adoption and maintenance of a moderate or vigorous intensity exercise regimen in middle and older-aged sedentary women (Cox, Burke, Gorely, Beilin, & Puddey, 2003). Findings revealed the center-initiated group had higher retention rates than the home-based group. The most frequent reasons given for withdrawing were illness or injury and lack of time. In the short term, the center-based regimen resulted in greater adherence to the program; however, once all the participants were excising at home, longer term adherence was similar for all groups (Cox et al., 2003).

Banks-Wallace (2007) conducted a 12-month home-based walking pilot intervention paired with monthly meetings to promote walking among sedentary hypertensive African American women. A mean increase in steps per day was demonstrated from baseline to the end

of the 12-month intervention (5%) and continued to increase by the end of the 6-month follow-up period (37%) (Banks-Wallace, 2007). Thus, the follow-up period was essential in establishing that the PA increases were sustainable. Likewise, in 2013, Adams, Burns, Forehand, & Spurlock (2015) implemented a community-based walking intervention to promote PA among African American women ages 35-69. The Stanford Walking Kit was used to guide participants in developing a personalized walking routine. Participants' minutes spent in moderate physical activities from pre-to post intervention increased from 93.50 to 99.23 (Adams et al., 2015). Lastly, Wilbur et al. (2015) compared the effects of a PA intervention of group meetings versus group meetings supplemented by personal calls on the adoption and maintenance of PA and weight stability among African American women. Steps per week and day were obtained from accelerometers. The intervention was also guided by the Social Cognitive Theory (SCT). Adherence to lifestyle PA in midlife African American women increased over the course of 48 weeks with high retention; 94% at 24 weeks and 90% at 48 weeks (Wilbur et al., 2015). Additionally, positive changes in PA were corroborated directly by both self-report and accelerometer measures of PA.

A review by Jenkins et al. (2015) revealed various theoretical frameworks have been used to guide PA interventions for African American women. Theoretical frameworks have been emphasized as integral to behavioral and health science research to guide intervention design and evaluation. The most commonly used theory identified was the Social Cognitive Theory (SCT) (Duru et al., 2010; Gaston et al., 2007; Parra-Medina et al., 2011; Pekmezi et al., 2013; Scarinci et al., 2014). SCT asserts that the social environment, the personal characteristics of the individual, and behavior interact and influence each other (DiClemente, Salazar, & Crosby, 2013). In addition to theoretical frameworks, culturally tailored interventions should be

considered (Gaston et al., 2007) based on cultural theories. Culturally appropriate intervention programs emphasizing health promotion and disease prevention in a support group setting have been found to offer an invaluable opportunity to provide information and strategies which can encourage African American women to engage in healthier lifestyles (Gaston et al., 2007). Other key components of activity interventions include problem solving opportunities, social support, group exercise, and goal setting (Banks-Wallace & Conn, 2002; Jenkins et al., 2015).

Similarly, Taylor, Baranowski, and Young (1998) recommended consideration of two factors that are promising for designing efficacious interventions. The first factor of community involvement permits the PA program's priorities, content, and implementation be developed, adapted by, or reside in the heart of the community. Another key component related to successful intervention design is the thorough assessment of needs, attitudes, preferences, and unique barriers prior to the implementation of the intervention (Taylor et al., 1998), which is the focus of the proposed DNP project that is the focus of this paper. Moreover, through semi-structured qualitative interviews, Kirchhoff, Elliott, Schlichting, and Chin (2008) describe exerciser maintainers' strategies for exercise maintenance. Facilitators to continue exercise were three-fold: being a positive influence for family members, establishing social support, and goal setting and reward strategies (Kirchhoff et al., 2008). These facilitators may be incorporated into PA program implementation to provide the resources to maintain implemented changes in PA over time.

Summary.

The benefits of PA are well established. PA can substantially improve overall health and quality of life (HHS, 1996; HHS, 2008; Office of Disease Prevention and Health Promotion, 2016c). Overall, intervention studies promoting PA in African American women have increased

over the past decade (Jenkins et al., 2015). The literature reveals several promising interventions and strategies utilized to increase PA among African American women. Some of these interventions and strategies include home-based PA programs, culturally tailored interventions, group-based PA programs, and walking programs. Specifically, the literature describes enhanced PA outcomes and adherence to PA with structured home-based PA programs. A key component here is structured—a prescribed exercise regimen to direct patients in their PA program.

Particularly, for the population served at the THWC, a structured home-based PA program is a sufficiently supported intervention to implement if found acceptable and feasible by the key stakeholders. A structured home-based PA program provides an initial means to overcome some common barriers in similar populations. Other strategies corroborated by the literature and recommended when implementing a PA intervention would be the use of goal setting, problem solving and education around identified barriers to exercise, objective outcome measures, and plans for program evaluation. Lastly, the most commonly used theory identified in the literature to influence behavior change was the SCT; therefore, this theory will guide the needs assessment and future implementation of a structured home-based PA program.

Moreover, conclusions for future studies were founded by Jenkins et al. (2015) when compared to Banks-Wallace & Conn's (2002) integrative literature review. Future studies that include measures beyond the immediate post intervention measurement are warranted (Jenkins et al., 2015). Also merited are studies using objective measures entirely or studies that combine self-reports with objective measurements to avoid measurement errors such as PA over reporting. Lastly, future research including larger sample sizes, randomization, and control groups are needed. Although more PA promotion research is occurring in this population, ongoing research is warranted. Intervention strategies that promote PA in African American

women are essential to reduce the risk of preventable health conditions and to reduce health disparities. It is also evident that future public health efforts and policy initiatives aimed at improving the health of low-income, African American women, who have disproportionately higher rates of obesity, lower levels of PA, and poorer dietary habits are warranted (Baruth et al., 2014).

Theoretical Framework

Social Cognitive Theory (SCT) was used as the theoretical framework guiding this DNP project. In brief, the SCT asserts that the social environment, the personal characteristics of the individual, and behavior interact and reciprocally influence each other (DiClemente, Salazar, & Crosby, 2013). SCT was developed and has been refined to apply to health behavior by Albert Bandura (Bandura, 2004) and other researchers. The five core determinants of SCT include knowledge of health risks and benefits of different health practices, perceived self-efficacy that one can exercise control over one's health habits, outcome expectations about the expected costs and benefits for different health habits, the health goals people set for themselves and the concrete plans and strategies for realizing them, and the perceived facilitator and social and structural impediments to the changes they seek (Bandura, 2004).

Knowledge is a precondition for successful behavior change (DiClemente et al., 2013). Knowledge acquisition is a fundamental starting point for all health promotion programs. Two types of knowledge include content and procedural knowledge. Content knowledge involves understanding the advantages and disadvantages of a health behavior. Procedural knowledge involves understanding how to engage in a given health behavior. Usual care at the THWC typically involves some education for patients on the benefits of PA. Both content and

procedural knowledge were supported and utilized throughout the proposed DNP project as various options for PA were reviewed with each participant.

Perceived self-efficacy is a person's perception of his or her ability to perform a specific behavior (DiClemente et al., 2013). Beliefs of personal efficacy play a central role in personal change (Bandura, 2004). Self-efficacy is a focal determinant because it affects health behavior both directly and by its influence on the other determinants. Efficacy beliefs influence goals; the stronger the perceived self-efficacy, the higher the goals people set for themselves. Self-efficacy beliefs also shape the outcomes people expect their efforts to produce. Those who have high efficacy expect to realize favorable outcomes; those of low efficacy expect their efforts to bring poor outcomes (Bandura, 2004). Further, resilient self-efficacy is the concept of perseverance even when conditions are not ideal and is vital because so many health-protective behaviors occur under difficult circumstances (DiClemente et al., 2013). People who have low efficacy are easily convinced of the futility of effort in the face of difficulties. Conversely, those with high efficacy view impediments as surmountable by improvement of self-management skills and perseverant effort (Bandura, 2004). In addition, the potential for challenging circumstances surrounding any given health-protection practice is often a function of the supporting environment (DiClemente et al., 2013).

More specifically, people can increase their perceptions of self-efficacy based on four methods of learning: (a) physiological state, (b) verbal persuasion, (c) vicarious experience, and (d) enactive attainment (DiClemente et al., 2013). Learning to diminish fear and other negative emotions that may be associated with performing a given health behavior is goal. Verbal persuasion is a second method of building self-efficacy which is the intent to convince people that they can perform a given health–protective behavior. Vicarious experience implies people

learn by watching others perform a given behavior. This form of learning is maximized when people observe someone quite similar to themselves successfully performing a given health behavior. The last and most effective method to increase self-efficacy is enactive attainment. Enactive attainment is physically guiding or coaching someone through the behavior. Thus, health promotion efforts should structure successful experiences for people adopting new behaviors. Finally, behavioral capacity is the actual ability a person has to perform a given behavior. Oftentimes, self-efficacy and a person's actual behavior capacity are misaligned; therefore, interventions for health behavior change must focus on increasing both self-efficacy and behavior capacity (DiClemente et al., 2013). Assessing modes of delivery for the home-based PA program was intended to help understanding whether or not vicarious experience and enactive attainment could be useful for the women to enhance their perceived self-efficacy. Additionally, the illustrated PA cards used in the reported project were tailored to the appearance of the women in the clinic; thus, enhancing the vicarious experience.

Health behavior is also affected by the outcomes people expect their actions to produce (Bandura, 2004). Before behavior change occurs, there must be a sufficiently strong belief that the health behavior will "pay off" in either the short-term or long-term (DiClemente et al., 2013). Outcome expectations are the anticipated positive outcomes that stem from engaging in the behavior. Although self-efficacy must be strong, outcome expectations must also be favorable enough to help propel the person into action. Both self-efficacy and outcome expectations are perceptions. Perceptions of outcome expectations can be influence by vicarious learning. One of the greatest challenges is helping people develop positive outcome expectations for behaviors that produce long-term, rather than short-term, benefits. Outcome expectations can also include negative perceptions. Reinforcement is the final aspect of outcome expectations. It can take the

form of adding something good or positive or subtracting something bad or negative and always involves an increase in the behavior. Self-efficacy and outcome expectations work together to determine the level of motivation a person may experience relative to the potential adoption of a health-protection behavior. SCT contends that the motivation is the product of expectancies and self-efficacy and involves a person's answer to two questions: (1) "Will adopting the health-protective behavior reliably lead to a valued outcome?" and (2) "Can I realistically perform the necessary behaviors?" Once this level of motivation is experienced, the person is ready to formulate goals (DiClemente et al., 2013). Question two was assessed throughout the semi-structured interviews with the women who participated in the reported-upon project. Also, selected questions from the EBBS questionnaire that were used in the proposed DNP project to assess participants' beliefs in PA outcomes by reviewing their current perceived barriers and benefits to PA.

According to SCT, behavior change is best achieved by breaking goals down into a progressive series of smaller subgoals (DiClemente et al., 2013). This implies that well-defined and easy-to-measure behaviors should be the subgoals that lead to a behavior change goal. The subgoals may not have a clinical benefit per se; however, they serve to enhance a person's self-efficacy and expectancies, thereby motivating the continued behavior that will eventually lead to clinically meaningful outcomes. Individualized goal formation will be relevant when implementing the PA program for THWC patients.

The perceived facilitators and obstacles are another determinant of health habits (Bandura, 2004). Goal attainment through motivated behavior is a function of the supporting factors, as well as the impeding factors, of a person's environment (DiClemente et al., 2013). The environment represents any social, economic, policy, legal, or physical influence that can act

on behavior. Included are personal impediments that deter performance of healthful behavior (Bandura, 2004). Personal barriers to health behavior change form an integral part of self-efficacy assessment. Selected questions from the EBBS questionnaire focused on understanding patients' perceived benefits of and barriers to PA. The needs assessment for a home-based (as opposed to an outside-the-home) PA program already targets known barriers to PA in similar populations based on the literature review and includes lack of time, cost, and neighborhood crime.

Lastly, an important aspect of SCT as applied to health promotion is reciprocal triadic causation (see Appendix A). Simply stated, it is the bidirectional pathways of influences between environment, person, and behavior (DiClemente et al., 2013). The intervention implications for reciprocal triadic causation are abundant, as they consist of multiple types of potential changes to the social, political, and economic environment as well as the more traditional cognitive approaches, in which changes in one domain can influence the other domains. The DNP project began the assessment of a home-based PA program, taking into consideration the relationship between the environment, person, and behavior.

Chapter 3: Methods

Project Design

The purpose of this DNP project was to conduct a needs assessment regarding the feasibility and acceptability of a home-based physical activity program for underserved mid-life African American women (aged 40 to 70 years), diagnosed with at least one of four chronic conditions (hypertension, diabetes, hyperlipidemia, depression), who receive healthcare in an urban primary care clinic. This DNP quality improvement needs assessment project utilized a descriptive cross-sectional mixed method observational design. The target population for

application of the results of this DNP project is African American women, ages 40-70 years, diagnosed with at least one of four chronic health conditions including hypertension, diabetes, hyperlipidemia, and depression who receive healthcare services in the clinic.

Project Setting

The needs assessment was conducted in an urban primary care clinic, The Ohio State University (OSU) Total Health & Wellness Clinic (THWC), in East Columbus where the medically-underserved target population receives healthcare. The OSU THWC is a nurse practitioner-led comprehensive primary care practice located at University Hospital East. The clinic offers an interprofessional team approach to integrated physical and mental health care for people across the life span. The THWC collaborative approach to care is modeled after the TEAMcare research conducted by the University of Washington. The TEAMcare trial was a randomized controlled trial designed to test collaborative care strategies in managing depression, diabetes, and coronary heart disease in primary care (Katon et al., 2010). The 12-month intervention integrated a treat-to-target program for diabetes and coronary heart disease with collaborative care for depression. The intervention combined support for self-care with pharmacotherapy to control depression, hyperglycemia, hypertension, and hyperlipidemia. Patients, primary care providers, and nurses established individualized clinical and self-care goals. Nurses then monitored the patient's progress in structured visits every two to three weeks and incorporated telephone calls every four weeks. Findings demonstrated significantly improved control of medical disease and depression (Katon et al., 2010).

The team at THWC is interdisciplinary and consists of family nurse practitioners (FNPs), psychiatric mental health nurse practitioners, mental health counselors, pharmacists, dietitians, social workers, nursing, and other health science students. Patients who are potentially

appropriate for TEAMcare are identified by the FNPs and include patients with one or more chronic disease (hypertension, diabetes, hyperlipidemia, and depression) who may benefit from the collaborative care approach to disease management (C. Rinehart, personal communication, April 21, 2016). The FNP seeing a potentially eligible patient discusses the TEAMcare approach with the patient, including describing the additional services the THWC can provide, and what is required from the patient. This approach offers weekly TEAMcare meetings among the interdisciplinary team to discuss patient's overall individualized disease management plan, any improvements to care, and revised plan. In addition, the THWC nurse and pharmacist conduct weekly or biweekly telephone calls with TEAMcare patients to review key health indicators such as blood pressure and glucose readings. Currently, however, there is no structured evaluation in the THWC for PA, nor is there a structured PA program, and goal-setting with patients is not standardly incorporated during office visits. PA evaluation is thus provider-specific and typically consist of discussing the importance of PA in self-management of chronic disease, assessing the patient's current PA level, and encouragement to increase PA. General PA information is also printed on the patient's After Visit Summary (AVS) that they receive following each primary care visit (C. Rinehart, personal communication, April 21, 2016). The proposed DNP project will be the basis for a clinical practice change at the THWC to further enhance the standardly-provided support for home-based PA programming for patients.

The THWC patient mix includes: (1) 51% African American; (2) more women than men, 749 and 555 respectively among ages 25-69; and (3) variety payer mix in the 18 and older population including 264 patients uninsured, 590 patients with Medicaid, and 197 patients with Medicare. Overall no show rates for the entire THWC average 12-17% most months (C. Rinehart, personal communication, April 14, 2016). There are 501 women ages 40-69. At

present, there are 31 patients involved in TEAMcare; however, this number is fluid and may fluctuate plus or minus one to two patients every few weeks (C. Westrick, personal communication, May 4, 2016). Of these 31 patients, there are 20 African American women aged 40-70 years (C. Westrick, personal communication, May 24, 2016).

The OSU College of Nursing Human Subjects Research Assessment Form (approved by the OSU IRB for reviewing DNP projects for IRB exempt status) was completed and responses were consistent with this proposed DNP project being a clinical practice quality improvement project that does not fit the federal definition of human subjects research. The completed Human Subjects Research Assessment Form was reviewed by the student's DNP committee members who confirmed the project does not require IRB approval per the responses for the IRB-approved assessment form (see Appendix B).

Sample

Qualitative and quantitative data were obtained through semi-structured interviews and questionnaires with the key stakeholders including the target population and clinic staff. Each key stakeholder participated on at least one occasion throughout the project implementation. Inclusion criteria for recruitment of patients include: 1) African American women, 2) ages 40-70 years, 3) diagnosed with at least one of four chronic health conditions including hypertension, diabetes, hyperlipidemia, and depression, 4) free of known cognitive impairment, and 5) English speaking. Exclusion criteria are as follows: 1) male, 2) ages < 40 or > 70, 3) without at least one of the identified chronic health conditions, 4) known cognitive impairment, 5) non-English speaking, and 6) severe pain or at end of life. A convenience sampling scheme was used. Sixteen patients and eight THWC staff participated in the project.

Procedures

Recruitment.

The Director of OSU THWC compiled information about the accessible DNP project population. The roster for patients scheduled to be seen in the THWC each week was reviewed by the clinic receptionist staff to identify patients who met the project eligibility criteria based on gender and age. The DNP student was positioned in the THWC on days when the potentially eligible participants will be at the clinic. Through a pre-determined script (see Appendix C), the staff asked a patient who meets the study inclusion criteria (women aged 40-70 years) at check in if she was interested in speaking with the DNP student. At that time, the staff directed the patient over to the student, who is positioned in the lobby, to discuss the project, or if the patient was roomed, the DNP student met the patient in the room. Participants were interviewed until data saturation occurs. Saturation was tentatively projected to occur based on data collected from ten to 15, but up to 30 patient participants, and up to 13 clinic staff providers in their roles as advanced practice registered nurses (8), psychiatric mental health nurse practitioners, pharmacists, dietitians, social workers, and nursing (see Appendix D for the DNP project protocol).

Consent process.

The women who were interested and directed to engage with the DNP student were provided by the DNP student with information about the project including an explanation of the project purpose and information about the project participation activities. If the patient was willing to participant in the DNP project, verbal and written informed consent to participate was obtained (see Appendix E). The clinic staff was provided with information about the project including an explanation of the project purpose and information about the project participation

activities. If the staff members were willing to participate in the DNP project, verbal and written informed consent to participate was obtained (see Appendix E).

Data collection.

After obtaining informed consent, baseline data including age, any of the four chronic health conditions as self-reported by the participant, and TEAMcare status was recorded. The DNP student was the primary data collector. Each participant completed the Rapid Assessment of Physical Activity (RAPA) questionnaire and selected questions drawn from a previously validated Exercise Benefits/Barriers Scale (EBBS) to assess their current physical activity (PA) level and benefits and barriers to exercise. Due to the reading level of the questionnaires and time constraints, the questions were read to each participant and their answers were recorded on the data collection form by the primary data collector. For the questionnaires, instrument development and scoring instructions were reviewed by the data collector prior to utilization. Following the questionnaires, semi-structured interviews were conducted by the DNP student with each individual participant. The interview was centered on women's review of pictures of the home-based PA program as illustrated by role models demonstrating the various exercises included in the PA program, as downloaded and printed from the National Institute on Again (NIA) at the National Institutes of Health (NIH) website (https://go4life.nia.nih.gov). The participant interview questions focused on interest in completing the specific exercises and perceived barriers to completing the specific exercises that are illustrated for the participant. The expected amount of time with each participant was 20 minutes. The answers to the questions were transcribed on a data collection form completed by the DNP student. A parallel set of semi-structured interviews was also completed with the clinic providers in either an individual interview format or as a focus group, as best fits with practice flow, and led by the DNP student.

These interview questions focused on their perceptions of the home-based PA program, the potential fit of embedding instructions about the program into usual care at the clinic, and what type of delivery model for the exercise would best suit the clinic's and patients' needs. The expected amount of time for the group or individual interviews was approximately 30 minutes, following informed consent, and including time for follow-up questions. Field notes were written by the DNP student throughout the individual and/or focused group interviews. Overall, quality of data collection and interpretation was ensured through prolonged engagement with the clinic staff and participants, peer debriefing, member checking, and triangulation of the patient and provider input on the exercise program (Stommel & Wills, 2004).

Buy-in from key stakeholders including the Director of the THWC was necessary for project implementation. The DNP student formed relationships with the THWC director and staff in advance of this proposed DNP project, and the director of the TWHC served as one of two preceptors for the DNP Clinical Immersion experience during which the DNP Final Project was conducted. Several other potential barriers existed throughout the data collection process. One anticipated challenge included the reading level of the EBBS questionnaire. The original wording on the EBBS (for the 26 items utilized for this DNP project) has a Flesch-Kincaid Grade Level of 9.6 and a Flesch Reading Ease of 41.5. An alternative for mitigation of this barrier included reading the questionnaire to the participant and adding alternate re-wording of some of the more difficult to comprehend questions selected for use. The alternate wording, developed by the DNP student, lowered the Flesch-Kincaid Grade Level to 7.5 (see Appendix G). Secondly, an added limitation may have included potential bias from the data collector during data collection, as due to resource constraints, the DNP student conducting the project also collected the data. It was important that the DNP student not display any emotion or expression toward the

participants' answers during the data collection process that could sway the participant in a positive or negative manner. To address this limitation, the DNP student practiced the questionnaires and interview questions in an objective manner with her academic advisor to gain practice prior to meeting with participants. Lastly, direct benefits to individual DNP project participants needed to be provided at the level that is consistent with compensation for time, travel, and inconveniences associated with the DNP project participation (Stommel & Wills, 2004). Each consenting participant received a small token of appreciation in exchange for the time and effort required to complete the questionnaires and interviews. The participant received a pre-made packet demonstrating the home-based PA exercises and their choice of a water bottle or a stress ball as a thank you for participating in the project. Non-excessive incentives or gratuities help assure there is no exploitation of a vulnerable target population (Stommel & Wills, 2004).

During and following the conclusion of the project, all project data and records were stored in a locked file cabinet, in the PI's campus office, password-protected on the secure College of Nursing R drive in a folder labeled with the DNP student's last name, and were accessible only to the DNP student, PI, and DNP Final Project committee members. The results of the project will appear in presentations and publications in aggregate form only, and such that no individuals can be identified or linked to specific responses.

Instruments

Questionnaires.

Rapid assessment of physical activity.

The Rapid Assessment of Physical Activity (RAPA) questionnaire was selected as one of the measurement tools. The RAPA questionnaire was designed to provide an easily administered

and interpreted means of assessing levels of PA among adults older than 50 years (Topolski et al., 2006). The RAPA was administered to the sample to obtain baseline PA levels that can then be measured in a program evaluation follow-up. The RAPA was developed after a review and evaluation of existing written questionnaires and was found to be reliable and valid compared with longer, validated Community Healthy Activities Model Program for Seniors (CHAMPS) questionnaire (Topolski et al., 2006). The RAPA is readable at the sixth-grade level and was easily understood by most participants in the validation study when developed. Older adults with cognitive impairment, however, may require that the RAPA be read to them.

The RAPA is a nine-item questionnaire with the response options of yes or no to questions covering a wide range of PA levels, from sedentary to regular vigorous activity, as well as strength and flexibility training (Topolski et al., 2006). The instructions for completing the questionnaire provide a brief description of three levels of PA (light, moderate, and vigorous) with graphic and text depictions of the types of activities that fall into each category. The total score of the first seven items is from 1-7 points, with the respondent's score categorized into one of five levels of PA: 1 = sedentary, 2 = underactive, 3 = regular underactive (light activities), 4 = regular underactive, and 5 = regular active. Responses to the strength and flexibility training items are scored separately, with strength training = 1, flexibility = 2, or both = 3 (Topolski et al., 2006) (see Appendix F). Time to administer is approximately five minutes.

The CHAMPS questionnaire was used as the criterion self-report measure in the validation of the RAPA questionnaire because it has been validated previously against an objective measure of PA (Topolski et al., 2006). To assess the sensitivity, specificity, positive predictive value, and negative predictive value of the RAPA, the CHAMPS were scored as a dichotomous variable for defining the level of PA as either moderate or vigorous. Criterion

validity was assessed by calculating Spearman rank-order correlation coefficients between the RAPA, two other PA measures, and the CHAMPS (Topolski et al., 2006). Furthermore, RAPA items were examined through SPSS software programs for accuracy of data entry and missing values. The results of the sensitivity, specificity, and predictive value analyses demonstrate the RAPA had the best sensitivity (81%) and negative predictive value (75%) (Topolski et al., 2006).

Exercise benefits/barriers scale.

Selected questions were used from the Exercise Benefits/Barriers Scale (EBBS) representing each of the EBBS subscales. EBBS was developed in response to a need for an instrument to determine the perceptions of individuals concerning the benefits of and barriers to participating in exercise (Sechrist, Walker, & Pender, 1987). Items used for the scale were obtained from an interview study, *Perceptions of Positive and Negative Consequences of Exercise, Weight Control, and Stress Management*, and from review of related literature. A final 43-item instrument was developed, consisting of a 29-item benefits scale and a 14-item barriers scale. The benefit component was categorized into five subscales: life enhancement (7 items), physical performance (9 items), psychological outlook (6 items), social interaction (4 items), and preventative health (3 items). The barrier component was categorized into four subscales: exercise milieu (6 items), time expenditure (3 items), physical exertion (3 items), and family discouragement (2 items) (Sechrist et al., 1987).

The instrument may be scored and used in its entirety or as two separate scales. The EBBS has a four-response, forced-choice Likert-type format with responses ranging from 4 (strongly agree) to 1 (strongly disagree) (Sechrist et al., 1987). Barrier Scale items are reverse-scored. Scores on the total instrument can range from 43-172. If used in its entirely, the higher the overall score, the more positively the individual perceives the benefits of exercise in relation

to barriers to exercise. Missing data may be handled in one of two ways. If more than five percent of the items are unanswered, it is recommended that the response be discarded. If the missing item response rate is less than five percent, median substitution prevents falsely low scores (Sechrist et al., 1987).

The EBBS has been tested for internal consistency, validity of its constructs, and test-retest reliability. A sample of 650 individuals (mean age of 38.7 years, 60% females, 40% males, middle class) responded to the instrument (Sechrist et al., 1987). Factor analysis of the 43-item instrument yielded a nine-factor solution with an explained variance of 64.9%. Second-order factor analysis was completed. Two factors were extracted, one a benefits factor and the other a barriers factor, with 47.4% of the variance explained (Sechrist et al., 1987). Cronbach's alpha was calculated as a measure of internal consistency for the final 43-item instrument; a standardized alpha of .952 was obtained. The 29-item benefits scale had a standardized alpha of .953 and the 14-item barriers scale had a standardized alpha of .866 (Sechrist et al., 1987). Test-retest reliability measures were obtained on a sample of 63 individuals recruited from the community; the test-retest interval was two weeks. Correlation coefficients were .889 for the 43-item instrument, .893 for the 29-item benefits scale, and .772 for the 14-item barriers scale (Sechrist et al., 1987).

A noteworthy challenge in utilizing the EBBS is the lengthiness of the scale given the participants' time constraints and attentiveness. Therefore, selected questions regarding benefits and barriers to PA were drawn from the EBBS to represent the various subscales for benefits and barriers (see Appendix G). The primary focus of the selected questions was to obtain descriptive statistics for individual items to accurately characterize the sample, as well as to analyze the

relationship of specific items and major subscale sum scores (for barriers and benefits, respectively) with other project variables.

Semi-structured interviews.

After viewing the graphics of the home-based PA program with each participant, semi-structured interview questions were used to further explore participants' needs surrounding a home-based PA program. Ultimately, the data contributed to the understanding of the circumstances under which a home-based PA program is well received and therefore, likely to be effective with this target population. The answers to the questions below were recorded on a data collection form:

1. Would you be interested in doing the home-based PA program?
2. (for each group of illustrated exercises) Do you feel you could do these exercises?
3. How many days per week would you spend doing these exercises?
4. How many minutes on those days would you spend doing these exercises?

The pictorial home-based PA program was reviewed with the THWC providers in either an individual or focused group setting. Semi-structured interview questions were created to discuss the program's feasibility and best delivery method among the clinic providers and their workflow. Field notes were written by the DNP student throughout the individual and/or focused group interviews.

1. What are your thoughts regarding this home-based PA program?
2. How would you explain the exercises to your patients?
3. How would you incorporate education about this PA program into a patient's routine care visit?

4. Is there anything you would change regarding this home-based PA program that would enhance the likelihood that your patients would successfully use it?

Data Analysis

Data were entered and analyzed using Statistical Package for the Social Sciences (SPSS) statistical analysis software. The data were initially inspected for accuracy of data entry, cleaned, and distributions of the variables will be examined. It was expected that missing data would be minimal due to oral administration of the measures. Demographics and clinical characteristics, including age, participation in TEAMcare, and past medical history (hypertension, diabetes, hyperlipidemia, and depression) were analyzed using mean, standard deviation (SD), and frequency percentages in the applicable contexts. The RAPA enables classification of participants based on the highest physical activity score reported on the RAPA questionnaire. Frequencies displayed as percentages for each physical activity category and strength and flexibility activities were summarized. Selected questions from the EBBS representing each of the main (benefits and barriers) subscales and minor subscales were used. A sum score for each main subscale was created based on the benefits and barriers questions, respectively with the main analysis at the level of the individual items using descriptive statistics (mean and SD). Additionally, to summarize relationships between variables obtained throughout the participant interviews, cross-tabulations and correlations were computed in the applicable contexts. The semi-structured interviews conducted with each participant and clinic provider were recorded through narrative text and utilized for data analysis. For participant semi-structured interviews, descriptive statistics including frequencies displayed as percentages were used for questions 1 and 2 and the mean with standard deviation was assessed for questions 3 and 4. A line-by-line analysis of the transcribed semi-structured interviews with clinic providers was conducted. The

key points and recommendations will be identified and recorded on a form. No personal identifiers were associated with participant response.

Chapter Four: Results

Results

Patient sample.

Demographic and clinical characteristics.

Demographic and clinical characteristics of the study sample are reported in Table 1. Sixteen African American women were interviewed who were 42 to 62 years of age (mean 53.4 years; SD 5.97) and diagnosed with at least one of the four chronic health conditions (depression, diabetes, hyperlipidemia, hypertension). Four additional women were approached but declined to participate in the project. Slightly over half (56.3%) of the sample was enrolled in the TEAMcare treatment program at the THWC, and all participants with diabetes (n=7; 43.8% of overall sample) were enrolled in TEAMcare. Seventy-five percent of the sample self-reported hypertension, 43.8% diabetes, 62.5% hyperlipidemia, and 62.5% depression. Twenty-five percent, 31.3%, 18.8%, and 25% of the sample reported having one, two, three, and four of the focus chronic conditions, respectively. As the number of chronic illnesses increased, the likelihood of being included in the TEAMcare model also increased, with patients with 3 or 4 health conditions more likely to be enrolled in TEAMcare (n = 6 of 7 patients in TEAMcare) as compared to patients with 1 or 2 health conditions (n = 6 of 9 not in TEAMcare), $\mathbf{X^2}(1) = 4.390$, $p = 0.036$. A substantial proportion of the TEAMcare patients; i.e., 9/31 (29%) of the total TEAMcare patient population participated in the project, and 9/20 (45%) of the African American women currently enrolled in TEAMcare participated in the project.

Table 1 *Participant demographic and clinical characteristics (n = 16)*

Characteristic	Mean	SD	Frequency (N)	Percentage (%)
Age (in years)	53.44	5.97		
Exercise Willingness (Time Expenditure)				
Days/Week	3.25	1.57		
Minutes/Day	23.33	14.23		
Exercise Perceptions				
Exercise Benefits[a]	32.44	5.61		
Exercise Barriers[b]	27.68	3.47		
TEAMcare Status				
Not in TEAMcare			7	43.8%
Yes in TEAMcare			9	56.3%
Chronic Conditions				
Hypertension			12	75%
Diabetes			7	43.8%
Hyperlipidemia			10	62.5%
Depression			10	62.5%
Co-morbidities				
1 chronic disease			4	25%
2 chronic diseases			5	31.3%
3 chronic diseases			3	18.8%
4 chronic diseases			4	25%
RAPA Activity Classification				
Sedentary			2	12.5%
Under-active Regular Light			7	43.8%
Under-active Regular Moderate			4	25%
Active			3	18.8%
RAPA Strength & Flexibility Activities				
Does Muscle Strengthening			2	12.5%
Does Flexibility Activities			6	37.5%

[a] Sixteen items; Possible sum score range 16-64, lower scores are more favorable and higher scores are less favorable. [b] Ten items; Possible sum score range 10-40, lower scores are less favorable and higher scores are more favorable.

Rapid Assessment of Physical Activity (RAPA).

The RAPA enables classification of participants based on the highest physical activity score reported on the RAPA questionnaire. Table 1 presents the results of the RAPA classification for the patient sample. Two women or 12.5% were classified as sedentary. Seven of the 16 women (43.8%) were categorized as under-active regular—light activities referring to doing only some light PA every week. Twenty-five percent (*n*=4) were classified as under-active regular—moderate activities meaning the women reporting doing moderate physical activities every week, but less than 30 minutes a day or five days a week. Lastly, only three women (18.8%) fell into the active category as they reported they completed 30 minutes or more a day of moderate physical activities, five or more days a week. Thus, 81.3% of the overall sample was classifiable as achieving suboptimal physical activity levels. The last two questions on the RAPA inquired about the women's strength and flexibility. Fourteen women (87.5%) reported they did not do activities to increase muscle strength once a week or more, leaving only 12.5% (*n*=2) who reported they did complete muscle strengthening exercises. For flexibility activities, 37.5% (*n*=6) stated they do activities to improve flexibility once a week or more. The U.S. Department of HHS currently recommends muscle-strengthening activities on two or more days a week that work all major muscle groups (CDC, 2015a).

Exercise perceptions – selected items from the Exercise Benefits/Barriers Scale (EBBS).

Selected questions from the EBBS representing each of the main (benefits and barriers) subscales and minor subscales (benefits - life enhancement, physical performance, psychological outlook, social interaction, preventative health; barriers – exercise milieu, time expenditure, physical exertion, family discouragement) were used. Sixteen of the 29 benefit questions and 10

of 14 barriers questions were asked. A sum score for each main subscale was created based on the benefits and barriers questions, respectively. The possible range of scores for the 16 benefits items was 16-64; lower scores are more favorable and higher scores are less favorable. The possible range of scores for the 10 barriers items was 10-40; lower scores are less favorable and higher scores are more favorable.

Exercise benefits and barriers sum scores for the sample are reported in Table 1. The mean sum score for Benefits was 32.44 (SD = 5.61), range of 22 – 43, and mean sum score for Barriers was 27.68 (SD = 3.47), range of 20 – 32. The average score for benefits is somewhat below the possible range midpoint of 40, while the average score for barriers is slightly above the possible range midpoint of 25, which is consistent with the overall sample having somewhat favorable perceptions of exercise benefits and slightly more favorable perceptions of barriers compared to the average possible sum scores for benefits and barriers, respectively. However, there was also substantial variability in perceptions of exercise benefits and barriers among the individual project participants.

Patient interviews regarding feasibility and acceptability of physical activity.

A primary purpose of this needs assessment project was to assess the feasibility and acceptability of a home-based physical activity program. In response to the question, "Would you be interested in doing the home-based physical activity program?" fifteen of the 16 women (94%) reported they would be interested. Similarly, in response to the question posed for each group of illustrated exercises, "Do you feel you could do these exercises?" 94% of the women stated that they felt that they could do each group of illustrated exercises for endurance, strength, flexibility, and balance. Table 1 summarizes results for exercise willingness based on the number of days and minutes participants indicated they would spend exercising ("How many days per

week would you spend doing these exercises? How many minutes each day would you spend doing these exercises?"). The average days per week participants reported they would be willing to spend doing the illustrated home-based physical activity exercises was 3.25 with a standard deviation of 1.57. Further, the mean minutes spent on those days on exercise was reported as 23.33 with a standard deviation of 14.23. The numbers of days and minutes reported by the women is substantially below what is currently recommended by the U.S. Department of HHS for at least 2 hours and 30 minutes every week or 30 minutes/day of endurance-type physical activity of at least moderate level intensity, on most (and preferably all) days/week (CDC, 2015a).

Staff sample.

Eight THWC staff members participated in individual and focus group interviews. The staff sample consisted of family nurse practitioners (FNPs), psychiatric mental health nurse practitioners, mental health counselors, pharmacists, social workers, nursing, and other health science students. Numbers of staff participants by professional discipline are not reported here to help assure the non-identification of individuals.

Staff interviews.

Overall, there was a positive response of staff to the overall concept of home-based physical activity (PA) program. In response to the first interview question, "What are your thoughts regarding this home-based PA program?" the staff agreed on the need for a tailored PA program for their complex patient population to help further improve patient health outcomes.

In response to the questions, "How would you explain the exercises to your patients?" and "How would you incorporate education about this PA program into a patient's routine care visit?" a key theme that emerged in interviews was the use of current and new technology to

disseminate education and instruction on the home-based physical activity exercises. Ideas included providing links to instructional videos that illustrate the exercise to be completed at home, developing an App with exercise related videos that can be played on the patient's smart phone, and placing healthy living material on the television in the lobby while the patients are waiting to be seen.

Regarding the question, "Is there anything you would change regarding this home-based PA program that would enhance the likelihood that your patients would successfully use it?" multiple themes emerged. First, there was a focus on collaborations to enhance PA in the THWC population such as building partnerships with local community centers to provide options for patients to engage in health promotion activities, including exercise. Likewise, staff interviews emphasized collaborating with other disciplines within the healthcare organization such as physical therapy, informational technology, and exercise physiology to potentially spark other opportunities for patient engagement in physical activity. Thirdly, another idea was to create a healthy living board or area in the clinic lobby that could help engage patients in their own self-care, provide resources for health promotion activities, and generally develop an avenue or cue to action for discussing PA in their visits with their healthcare providers. Fourth, goal setting and close follow-up were identified as evidence-based approaches to enhance PA in this population and to increase adherence to PA. Along with the positive feedback and ideas for moving forward based on the four key themes, staff also acknowledged that barriers continue to exist to clinical practice change. For the concept of implementing a home-based physical activity program for the patient population of focus, expected challenges noted by staff included time constraints already imposed on routine care visits, additional time that would need to be

allocated for creating a PA intervention that included technology use, and other costs of intervention development.

Chapter Five: Discussion

Discussion of Results and Outcomes

To understand how to best engage patients in their own health promotion behaviors, healthcare providers need to first understand the needs and preferences of specific patient populations and individuals for these activities. This DNP quality improvement project in which a needs assessment was conducted adds to the understanding of key stakeholder (patient, healthcare provider) perspectives on the circumstances under which a home-based PA program could be acceptable and feasible to implement and to sustain for a particular target population within the selected clinic that was the focus of the project. The results of the needs assessment also will help guide the future tailoring of the PA program to address key barriers to PA. If the PA program is effective, it has potential to significantly enhance patients' self-management of chronic health conditions via support for healthy lifestyle behaviors, and thus to contribute to improving overall health outcomes.

The results of this DNP project revealed that the women were interested in engaging in PA in their homes and that nearly all (94%) of the women thought the illustrated exercises were feasible to do. However, the women's self-reported average days per week (3.25) and minutes spent on exercise on those days (23.33) is below the recommended U.S. Department of HHS physical activity guidelines of at least 150 minutes a week of moderate-intensity, or 75 minutes a week of vigorous-intensity aerobic PA, or an equivalent combination of moderate and vigorous intensity aerobic activity (Office of Disease Prevention and Health Promotion, 2016b). The RAPA questionnaire results also revealed that a large portion of the women are not meeting the

recommended physical activity guidelines—at least 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity every week. Only 18.8% (n=3) of the women reported meeting the target PA guidelines, with the majority (81.3%) classifiable as achieving underactive or sedentary PA classifications. Nearly all (87.5%) also did not meet the recommendations for muscle strengthening activities—two or more days a week that work all major muscle groups (CDC, 2015a).

These project findings documenting less than optimal levels of PA are consistent with other evidence documenting that a majority of all U.S. adults do not meet the physical activity (PA) guidelines as set forth by the U.S. Department of HHS. African Americans have been found to be less likely to meet recommendations for PA (Shuval et al., 2013) and women are less likely than men to meet the guidelines for aerobic activity (CDC, 2014). The Total Health and Wellness Clinic (THWC) could meet the USPSTF recommendations of offering or referring adults who are overweight or obese and have additional cardiovascular disease (CVD) risk factors to intensive behavioral counseling interventions to promote a healthful diet and PA for CVD prevention (Grade B evidence) (USPSTF, 2015). Within the THWC at the level of the individual patient, some physical activity is better than none. Utilizing the information obtained in the current needs assessment, the THWC may initiate focused clinical practice changes for PA counseling of individual patients and develop a PA intervention that focuses on the patients becoming more active, even if the time spent on exercise does not necessarily fully meet the U.S. Department of HHS physical activity recommendations. At least some PA implemented in an incremental change process can enable progressive problem-solving of key barriers to PA and support improved self-efficacy for taking on more challenging levels of PA over time. Realistic

goal-setting in context of women's perceptions of feasible amounts of PA is a starting point for stepwise gains in PA to meet the PA recommendations.

Composite scores for benefits and barriers as well as individual item scores were analyzed for insights on women's perceptions of benefits of and barriers to PA. Counter to expectations, while there was an inverse association between endorsed benefits and barriers sum scores as anticipated, the correlation was not statistically significant. Overall, the sample had somewhat favorable perceptions of exercise benefits and slightly more favorable perceptions of barriers compared to the average possible sum scores for benefits and barriers, respectively. This result reveals that while the women generally favored exercise and understood the benefits of PA, the women also endorsed multiple barriers to PA. Because specific barriers may prevent women from engaging in optimal amounts and types of PA despite their awareness of PA benefits, these results suggest that the PA intervention can be individually tailored based on the specific barriers that individual women endorse. For example, a woman who perceives that exercise is unduly tiring and also does not perceive exercise as increasing energy can be coached to persist with smaller amounts of a selected type of PA and to gradually increase the duration of the chosen activity, within provision of information about how the energizing effects of exercise may take longer to be experienced relative to the initial fatigue that is experienced. This individualized approach is also supported by the extent of variability in individual women's responses for specific barriers, in which particular barriers are somewhat specific to the context of an individual woman's life.

Some barriers to exercise identified in the literature were also reported by the women in this project. Endorsed barriers that parallel the existing literature include perceived constraints of fatigue (reported by over 50% of the women), time, motivation, health ailments, and family

support. While most women felt they could complete the home-base PA exercises, many also commented on modifications that would be necessary and limitations due to their health ailments notably joint pain. By contrast, having safe places to exercise, financial cost, and body image were not identified as significant barriers to PA in this sample.

Acknowledging and understanding the benefits and barriers to PA in this population will help guide clinical practice changes including enhanced counseling and future clinical level interventions for PA within the THWC. Currently, PA evaluation is provider dependent and typically consists of discussing the importance of PA in self-management of chronic disease, assessing the patient's current PA level, and encouragement to increase PA (C. Rinehart, personal communication, April 21, 2016). The results of this needs assessment document that knowledge of the benefits of PA is generally adequate among the patients included in the project sample, so a primary emphasis in counseling on benefits of PA may not optimally support individual level behavior change. Instead, counseling may more effectively focus on key individually-specific barriers that limit physical activity as discussed above, and usefully incorporate specific strategies for working around the short-term barriers to PA. For example, if pain and physical limitations is a barrier to PA, the clinic may want to modify their counseling on education regarding the more long-term benefits of PA on joint health and arthritic pain, as well as provide specific strategies for management of joint discomfort and protection of joints during PA. Further, tailoring a patient's recommended PA to take into consideration their specific constraints could more effectively support desired levels of PA, including agreement of the clinician and patient on what level and types of PA constitute a reasonable starting point for engaging in PA. Similarly, discussions surrounding the long-term effects of PA on energy and

mood may be implemented; e.g., short-term fatigue may be expected when initially becoming more physically active, but longer term benefits may be obtained by persisting with PA.

Additional approaches to interventions which can be accomplished outside of individual clinician-patient routine care visits may support feasibility of clinical practice changes to enhance support for PA. The staff group and individual discussions confirmed the need for increased support for PA in the clinic. The staff interviews provided a number of specific ideas for what could be done, including utilizing information technology, collaboration, and goal setting approaches to guide the recommended strategies stated above. In evaluating individual and practice level interventions, valid and reliable, yet more feasible, data collection tools that are brief and at an appropriate reading level for the clinic's patient population is recommended. The measures used were generally feasible to use for this needs assessment project but may or may not be time-feasible to build into usual care if requiring that clinicians themselves incorporate them into routine care visits. Lastly, strategies to create community support and increase adherence to exercise would also be an important recommendation for a clinical practice change that supports PA.

Limitations

This project had some limitations. The DNP student conducting the project also collected data from the questionnaires and semi-structured interviews, potentially leading to response bias. Questions asked by the DNP student may have encouraged socially acceptable responses on both the RAPA and EBBS questionnaires. In attempt to minimize this bias, the DNP student practiced the questionnaires and interview questions in an objective manner with her academic advisor to gain practice prior to meeting with participants. In addition, the DNP student worked to not display any emotion or expression toward the participants' answers during the data collection

process that could sway the participant in a positive or negative manner. However, the likelihood of a substantial response bias is somewhat less likely, as the results that were obtained provide evidence of variability of self-reported perceptions, as well as documenting less-than-optimal levels of PA that are largely consistent with existing evidence. That is, the responses of the women appeared to reflect their challenges with barriers and obtaining adequate levels of PA as well as generally favorable perceptions of PA benefits.

Selected questions drawn from a previously validated Exercise Benefits/Barriers Scale (EBBS) to assess the women's benefits and barriers to exercise. Due to the original reading level of the EBBS, alternative wording was developed for some questions to enhance the comprehension of the question being asked. Because of interview time constraints, the questions were read to each participant and their answers were transcribed by the primary data collector. In some instances, it is possible that the questions being asked were limited in being able to glean full insights into the perceptions of the women's benefits and barriers to exercise. The first question on the RAPA questionnaire requires a yes or no answer to the following double-barreled question which embeds two options for PA, "I rarely or never do any physical activities." The next six RAPA questions then proceed to ask about the amount of light, moderate, and vigorous activities completed by each participant. When reading these questions to the women, they sometimes appeared confused on how to answer questions two through seven if their first response was "yes" to question one. This confusion may have led to misinterpretation of the questionnaire, and thus their responses could potentially be inaccurate and not necessarily reflect their current physical activity level.

It is possible that drawing conclusions from a relatively small sample size limits the generalizability and transferability to the larger subset of patients at the THWC meeting the

project inclusion criteria. However, patient interviews occurred until data saturation such that sampling more patients would not likely lead to additional new information related to the purposes of the needs assessment. In addition, there was evidence that the obtained sample was substantially representative of the highest-need patient population at the THWC clinic as indexed by enrollment in TEAMcare; i.e., 9/31 (29%) of the total TEAMcare patient population participated in the project, and 9/20 (45%) of the African American women currently enrolled in TEAMcare participated in the project.

For the staff focus group discussions, the results may have influenced by group dynamics and facilitation; e.g., some group members may have been reluctant to reveal their true opinions in a group context, particularly if they were concerned that others in the group do not share their opinions. However, the staff interviews were fruitful in yielding a number of specific ideas for next steps to implement specific changes at the individual and patient population level to enhance support for PA. The approach to interviews and data collection was feasible and pragmatic for an initial needs assessment in support of designing specific next quality improvement initiatives that would be customized to the particular clinical setting and population of women served.

Conclusion

Physical inactivity is a major risk factor for health disparities in outcomes for chronic diseases that differentially and adversely impact minority populations, including but not limited to African American women. Further development and implementation of evidence-based interventions and strategies are needed to promote PA among African American women and their communities to reduce and manage the risk of preventable health conditions associated with health disparities. This successfully-conducted needs assessment, which is the first project of its

kind at the THWC, confirms that a home-base PA program in mid-life African American women with chronic health conditions is both feasible and acceptable. The results of the needs assessment also identified variability in and multiple specific barriers to PA, provided a foundation of understanding of the complex needs of the patients, and identified the challenges faced by the THWC staff when designing future interventions to promote PA. Staff also generated a number of specific ideas for the design and implementation of clinic-specific quality improvement initiatives to more fully support physical activity of patients. The identification of barriers to PA and feedback from staff focus groups will help guide the development of a tailored home-based PA program and future initiatives at the THWC to support PA. Increasing PA in this population will enhance self-management of chronic health conditions, support healthy lifestyle behaviors, and improve overall health outcomes.

Relationship of project to the AACN (2006) DNP Essentials.

In 2006, the American Association of Colleges of Nursing (AACN) defined the essentials of doctoral education for advanced nursing practice. The eight essentials include: (I) scientific underpinnings for practice, (II) organizational and systems leadership for quality improvement and systems thinking, (III) clinical scholarship and analytical methods for evidence-based practice, (IV) information systems/technology and patient care technology for the improvement and transformation of health care, (V) health care policy for advocacy in health care, (VI) interprofessional collaboration for improving patient and population health outcomes, (VII) clinical prevention and population health for improving the nation's health, and (VIII) advanced nursing practice (American Association of Colleges of Nursing [AACN], 2006).

This DNP project met Essential I based on incorporating the patterning of human behavior in interaction with the environment in normal life events (AACN, 2006). A literature

review resulted in understanding of how the physical, built, and social environment affects personal lifestyle choices and chronic disease management. Additionally, models for evidence-based practice change and theories associated with individual behavior change guided the needs assessment process and development of the concept of a home-based PA program. Doctoral level knowledge and skills in organizational and systems leadership are consistent with nursing and health care goals to eliminate health disparities and to promote excellence in practice (AACN, 2006). Essential II was addressed by focusing on the needs of a target population to develop a practice change to enhance PA. The practice change initiative is based in evidence from the literature and needs assessment data specific to the target population. The practice change can then be evaluated for feasibility and impact on health outcomes within the organizational, cultural, and economic perspectives of the THWC. Essential III was met by use of analytical methods to critically appraise existing literature to identify the best available evidence for guiding clinical practice change (AACN, 2006). For the specific purpose of this DNP project, the most current literature on PA, chronic disease, and PA interventions among vulnerable populations was examined to guide the needs assessment as a basis for designing and implementing a clinical practice change to support PA in the target population. Results of the project can be disseminated to enhance clinical practice change. Moreover, to accomplish the Institute of Medicine (IOM) mandate for safe, timely, effective, efficient, equitable, and patient-centered care in a complex environment, healthcare providers must function as highly collaborative teams. DNP Essential VI applies in this context, as the DNP student employed effective communication and collaborative skills within the interdisciplinary THWC, in the needs assessment development and implementation in relation to a home-based PA program. Through the clinical immersion experience during which the DNP project was implemented, the

DNP student engaged with the patients and staff and further develop an understanding of the innovative team based approach to care. The completed project addressed Essential VII—clinical prevention and population health to improve the nation's health (AACN, 2006). The needs assessment will serve as a foundation for a clinical practice change, which is the implementation of a home-based PA program. The project results also can be used to identify the particular mechanisms of change leading to implementation of the PA program, such as approaches to the individual counseling of patients regarding PA. The concepts of public health, health promotion, determinants of health, and evidence-based recommendations are the underpinnings of the DNP project. The project also addresses the gaps in care of individuals and improve health status. Lastly, Essential VIII—advanced nursing practice—was addressed in the completed project. The project has potential to initiate a practice change which will in return help advance practice providers counsel their patients and provide resources to support PA. The DNP student also developed and will sustain therapeutic partnerships with patients, clinic staff, and community stakeholders to facilitate optimal care and patient outcomes now and in future initiatives (AACN, 2006).

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Literature Summary Table 1

Study/ Author	**Year**	**# Participants**	**Mean age or other sample characteristic pertinent to your question**	**Study Design**	**Intervention**	**Major Finding that address your question**
Scarinci et al.	2014	565 (screening 267; healthy lifestyle 298)	AA women Mean age 53.9 Majority educated above high school level 70% incomes < $30,000	Cluster RCT	Intervention arm = 5 week healthy lifestyle intervention (4 group sessions and one individual); Comparison arm / screening + educational/behavior strategies to promote breast/cervical cancer screening (4 group/one individual session)	Utilized CBPR Significant change in PA @ 12 month follow up – 24%
Gaston, Porter, & Thomas	2007	134 (106 in PTSC intervention group; 28 comparison group)	AA women >35 y/o	Multisite, Quasi-experimental Churches, state health education center, community center,	Group met for 90 minutes for 10 weeks; given pretest, set a specific goal; participants received a textbook and curriculum workbook Comparison received textbook only	Significant changes in pre-posttest Pretest – reported 1.91 days per week aerobic exercise. Posttest – reported 3.97 days per week aerobic exercise, 2.48 @ 6mo, 3.21 @ 12 months Also increase

						engagement in strength building exercises Pretest – 1.53 days per week Posttest – 2.53 days per week Did not remain at 6mo however @ 12 mo, increase #/days engaged in strength-building exercises (2.45) No pre-posttest changes in comparison group
Parra-Medina et al.	2011	266	AA women Low income 35 y/o and older	RCT Community health centers	Intervention group = standard of care (motivational, stage-based behavioral counseling from PCP, nurse-assisted goal setting, community resource guide, ethnically tailored educational materials) + 12 motivational, stage-based, ethnically tailored newsletters over 1 yr, in depth introductory phone	Intervention group were more likely than standard care to decline in total PA @ 6 mo. Intervention group significantly more likely to improve in leisure time PA @ 6 mo.

					call, up to 14 brief motivationally tailored telephone counseling calls from research staff over 1 yr.	
Christie, Watkins, Weerts, Jackson, & Brady	2010	383	AA women >18 y/o wishing to lose weight without physical limitations	Single group, pre-posttest	2 phases: Phase 1 – structured meeting for 12 weeks led by staff, dietician, exercise consultant and chef Included 1-hour PA, 1.5 hours nutrition education, cooking demonstrations, group social support Phase 2 – 12 more weeks of meetings, same topics just more informally led by AA health coordinator and other program participants	Exercise in minutes was significantly higher from baseline to 12 weeks and 24 weeks but not significantly different between 12-24 week observations
Peterson & Cheng	2011	18	AA women Mean age 49.61 55% had income < $40,000	Pilot study	Received HSPAP booklet revised for AA women One 2-hour session weekly x 6 weeks	Significant + correlation between the increase in perceived social support and an increase in intensity

					(30 min engaged in PA – walking, indoor aerobics, dancing, yoga, strength training with hand wts) Weekly sessions held at church and facilitated by AA nurse practitioner Set goals, enlist social support, document challenges and successes Group meetings provided appraisal, belonging, tangible, self-esteem domains	of PA Total minutes of activity per week reported on 7-DAR increased significantly during 6 week study (412 min/week to 552 min/week) Intensity of PA not statistically significant
Duru, Sarkisian, Leng, & Mangione	2010	71 (37 randomized to intervention, 34 to control arm) However due to attrition and loss to f/u; only 62 included in primary	AA women At least 60 y/o Self-reports PA < 30 min 3x week	RCT	90 minute meetings x 8 weeks; followed by monthly meetings x 6 mo. 2 groups: Intervention included 45 min activity per week + faith-based curriculum (EBP for	Intervention participants increased mean weekly walking activity by 7457 steps more than control arm @ 6 mo. However, no significant difference in self-reported PA

		outcome			PA programs, PA choices, +reinforcement, enhance self-efficacy, building social support) Control group – engaged in 45 minutes of PA each week; NOT exposed to faith-based curriculum	
Anderson & Pullen	2013	27	AA women 60+ y/o Four Christian faith communities	Cluster RCT	PASS intervention: 90 minute sessions weekly x 10 weeks; administered by AA RN; goal setting, weekly walking and muscle strength activity goal, prayer and Bible passages	HP 2020 target for moderate-intensity PA reached by 73% by intervention group and 69% control group HP 2020 target for muscle-strengthening activity reached by 73% by intervention and 12.5% control group Significant difference between groups for muscle-strengthening No significant

						difference for amount of moderate-intensity PA or total daily expenditure
Wilbur, Miller, Chandler, & McDevitt	2003	153	AA women (33%) Caucasian women (67%) Sedentary at leisure 45-65 y/o	Pre-post intervention	24-week home-based walking program Personal exercise prescription (standardized to walking, 4x week, and duration which increased in first 4 weeks from 20-30 min), instructions, and support from nurse research team member Nurse met with each woman every 2 weeks to promote support and reinforcement in the form of feedback, praise, encouragement, and transfer data	AVG. adherence to frequency was 66.5% (range 6-104%) Adherence higher for Caucasian than for AA Adherence to duration and intensity was > 90%

Spector, Deal, Amos, Yang, & Battaglini	2014	13	18 + y/o (mean age 51.6) AA women invasive breast cancer sedentary All with some college education	Prospective single arm pre/posttest design	16 weeks home-based progressive aerobic (walking) and resistance training; began with low intensity walking and resistance training progressing to 150 min/week of low-to-moderate intensity exercise Thera bands with instructions for resistance training and pedometer to encourage walking Included initial and weekly telephone motivational interviewing sessions	Significant increase in total minutes of weekly PA post intervention Moderate-to-vigorous activity increased post intervention
Wilbur et al.	2008	156 ET group 125 MT group	AA women 40-65 y/o Sedentary	Quasi-experimental	The Woman's Walking Program – 12-month interventional trial with a 24-week adoption phase and 48-week maintenance phase	@ 24 weeks, ET women completed 45% and MT women completed 29% No significant difference in

					All participants had tailored walking prescription (3x per week), health information, problem solving, goal setting Enhanced treatment (ET) – behavioral strategies culturally targeted and tailored to the women; Attending 4 – weekly targeted workshops (60 min with topics such as benefits to walking, overcoming barriers, handling relapses); followed by weekly telephone calls x 3 weeks, then every other week x 14 weeks and monthly during maintenance Minimal treatment (MT) – orientation and no follow up	walking intensity between groups ET group – significant relationship between the # of workshops attended and walking adherence at 24 and 48 weeks Both groups declined in adherence and self-reported PA during maintenance phase; however, decline was less in ET group

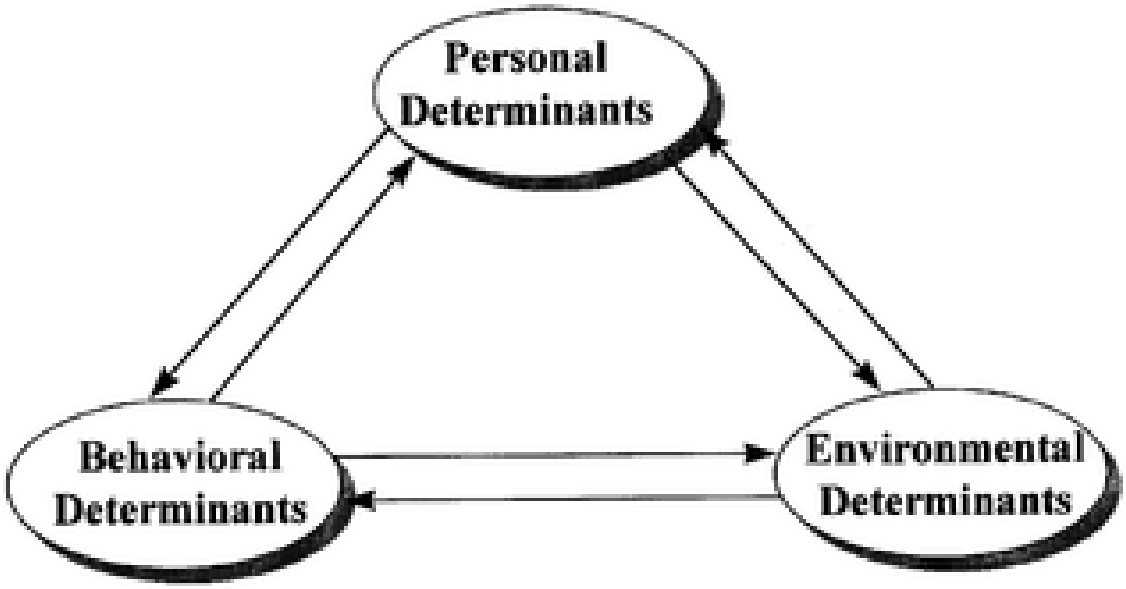
Pekmezi et al.	2013	Focus group = 66 Demonstration trial = 10	AA women in trial between 19-65 years of age (mean age 39.1) Alabama 90% retention	Mixed methods (qualitative and single arm pre-posttest demonstration trial)	11 Focus groups – learn about PA barriers and intervention preferences Demonstration trial – theory-based individually tailored PA intervention Home-Based Individually Tailored PA Print Intervention (HIPP)– lasting one month; then one month post intervention assessments Intervention consisted of behavioral strategies for increasing PA (goal setting, self-monitoring, problem solving, social support, rewards); motivation match PA manuals; individually tailored computer expert system feedback	Participants reported increased moderate intensity or greater PA from 89 min/week to 155 min/week from baseline to 1 mo. 70% reported increased motivational readiness for PA @ 1 mo.

					reports through mail; Received tip sheets addressing barriers	
Banks-Wallace	2007	21	Sedentary hypertensive African American women; mean age 50.3	Pre/post single group design with 6 mo follow up	"Walk the Talk" 12 mo Pilot intervention to promote walking 3-hour monthly group meeting and home-based walking Group sessions included storytelling, interactive learning, group PA, walking partners	Changes in mean steps per day, BP, and weight 5% increase in steps per day from baseline -13% drop in systolic BP by 12 months Weight – 9% drops in pounds at 12 months but + 4% at 18 months (6 mo follow up) During 6 mo follow up period, walking behavior increased a mean of 37% over baseline
Adams	2015	29	African American women ages 35-69; mean age 48.75	Pre/post intervention design	Community-based walking intervention at a church utilizing the 6 week Stanford Walking Kit	Preintervention time spent walking in the past 7 days for at least 10 minutes decreased 55-52;

					Five weekly group sessions offered	however minutes spent in moderate PA per week increased significantly (93.5-99.2) Post intervention time in minutes spent sitting on a weekday decreased from 474-363
Wilbur et al.	2015	288 women	African American women 40-65 years of age	RCT	48 week/ 3 intervention conditions 18 cohorts Each received all 3 interventions but not in same order All attended six 2-hour group meetings – participant manuals with learning activities Steps counted by accelerometer; individual goal setting; entered in automated telephone computer-linked system Reminder call if needed	Increase adherence to lifestyle PA with high retention – 94% at 24 weeks, 90% at 48 weeks At 24 weeks, increase in number of minutes of moderate to vigorous PA Weight stable for participants; some lost Group meetings are effective; decay in adherence may be helped with telephone calls

					Personal motivational telephone calls	

Appendix A



Note. Reciprocal triadic causation in part of the Social Cognitive Theory (SCT) as applied to health promotion and behaviors. Behavior is the result of the bidirectional pathways of influences between the environment, person, and behavior (DiClemente et al., 2013). The reciprocal triadic causation can assist in understanding these influences in relation to a person's health promotion behaviors such as physical activity. Understanding these factors underlying physical activity behaviors can lead to potential changes to the social, political, and economic environment as well as the more traditional cognitive approaches, in which changes in one domain can influence the other domains.

Appendix B

Human Subjects Research Assessment Form (translated from PDF to word document)

PI: Dr. Celia Wills, PhD, RN

Title: Needs Assessment for a Home-based Physical Activity Program for Mid-life African American Women with Chronic Health Conditions in an Underserved Healthcare Setting: A Quality Improvement Project

Brief Description of Project/Goals: The purpose of this project is to conduct a needs assessment regarding the feasibility and acceptability of a home-based physical activity program for underserved mid-life (ages 40-70) African American women diagnosed with at least one of four chronic conditions (high blood pressure, high cholesterol, high blood sugar, and depression) who receive healthcare in an urban primary care clinic. One on one interviews with the women in this subgroup will include collecting information about their current level of physical activity (PA) and perceived barriers and benefits to exercise. The women will then be interviewed about their perceptions of the home-based physical activity exercises using laminated cards that include culturally appropriate pictures of women demonstrating these activities. The feedback will center around their perceptions of the home-based PA program, interest in doing the physical activities, ability to complete the activities, and the expected amount of time spent completing these exercises. Lastly, a group interview with the clinic staff will be centered on their perceptions of the home-based PA program, the fit into usual care, and the best mode of delivery. Ultimately, the needs assessment will add to the understanding of the circumstances under which a home-based PA program is well received; therefore, likely to be effective with this target population and sustainable within the clinic.

Questions:

1. Will the project involve testing an experimental drug, device, or biologic? **No**
2. Has the project received funding to be conducted as a human subjects research study? **No**
3. In addition to any other purposes, is the project intended to develop or contribute to generalizable knowledge AND/OR has the project been designed in such a way that the findings will be generalizable? **No**
4. Will the results of the project be published, presented or disseminated outside of the institution conducting it? **Yes**
5. Will the project occur exactly as proposed regardless of whether individuals conducting it may benefit professionally from it? **Yes**
6. Is the project intended to improve or evaluate the practice or process within a particular institution or a specific program? **Yes**

Message that appeared after the Human Subjects Research Assessment Form (PDF) was completed:

The project appears to constitute QU and/or Program Evaluation and does not fit the federal definition of human subjects research. Further IRB review is not required. Ensure that all those associated with the project are aware that it is ongoing. After clicking “OK”, you can print a copy of this form to save with your files, as it serves as documentation that IRB review is not required for this project. Please follow up with your College’s HIPPA privacy officer as HIPPA requirements will still need to be met. If you work for OSUMC and your project involved data from OSUMC, you must also complete a Medical Center QI project review.

Appendix C

Pre-determined Script

"We have a doctoral nursing student in the clinic today who is doing a project about people's thoughts about doing exercise at home to improve their own health. Would you be interested in speaking with the student while you wait on your provider to see you?"

Appendix D

DNP Project Protocol

I. Objective

The primary aim of this DNP project is to conduct a needs assessment regarding the feasibility and acceptability of a home-based physical activity program for underserved mid-life African American women (aged 40 to 70 years), diagnosed with at least one of four chronic conditions (high blood pressure, high blood sugar, high cholesterol, and depression), who receive healthcare in an urban primary care clinic.

II. Background and Rationale

Only 21% of all U.S. adults meet the U.S. Department of Health and Human Services (HHS) 2008 Physical Activity (PA) Guidelines. Particularly, African Americans (AA) are less likely to meet public health recommendations. This disparity might stem from a lack of culturally appropriate interventions, or differences in PA self-efficacy and knowledge, income, education level, physical and built environment, social support, or neighborhood social cohesion. Additionally, the prevalence of some chronic diseases is also higher among AA. Historically, the Near East population of Columbus, Ohio consists of AA of lower socioeconomic status with higher rates of hospitalization due to chronic disease. The Total Health and Wellness Clinic (THWC) is positioned at University Hospital East in the Near East community. Multiple chronic health conditions are managed in the THWC, including high blood sugar, high blood pressure, high cholesterol, and depression. These chronic diseases are among the most common, costly, and preventable of all health problems. Health promotion activities such as PA can help to prevent and manage the four most prevalent chronic health conditions seen at the THWC to reduce the likelihood of adverse outcomes. However, there is no structured PA assessment or program to assist patients with initiation of this health protective behavior. The literature reveals several promising interventions and strategies to increase PA among AA women including home-based PA programs, culturally tailored interventions, group-based PA programs, walking programs, face-to-face sessions, telephone encounters, and peer support. To understand how to best engage patients in their own health promotion behaviors, healthcare providers need to first understand the needs and preferences of specific patient populations and individuals for these activities. Therefore, the focus of the proposed project will be to conduct a needs assessment regarding the feasibility and acceptability of a home-based PA program for underserved mid-life AA women, diagnosed with at least one of four chronic conditions, who receive healthcare in the THWC.

III. Procedures

A. Project Design

The project will utilize a descriptive cross-sectional mixed method observational design. Qualitative and quantitative data collection will be obtained through semi-structured interviews and questionnaires with the key stakeholders including the target population and clinic staff.

Each key stakeholder will participate on at least one occasion throughout the project implementation.

B. Sample

A convenience sampling scheme will be used. Up to 30 patients and eight Total Health and Wellness clinic (THWC) staff will participate in the project. Participants will be interviewed until data saturation occurs.

Inclusion Criteria: 1) African American women, 2) ages 40-70 years, 3) diagnosed with at least one of four chronic health conditions including hypertension, diabetes, hyperlipidemia, and depression, 4) free of known cognitive impairment, and 5) English speaking.
Exclusion Criteria: 1) male, 2) ages < 40 or > 70, 3) without at least one of the identified chronic health conditions, 4) known cognitive impairment, 5) non-English speaking, and 6) severe pain or at end of life.

C. Measures/Instrumentation

Each participant will complete a packet with multiple types of measures. The Rapid Assessment of Physical Activity (RAPA) questionnaire and selected questions drawn from a previously validated benefits and barriers to PA scale will be utilized to assess their current physical activity (PA) level and benefits and barriers to exercise. Following the questionnaires, semi-structured interviews will be conducted by the DNP student with each individual participant. The interview will be centered on women's review of pictures of the home-based PA program as illustrated by role models demonstrating the various exercises included in the PA program, as downloaded and printed from the National Institute on Again (NIA) at the National Institutes of Health (NIH) website (https://go4life.nia.nih.gov). The participant interview questions will focus on interest in completing the specific exercises and perceived barriers to completing the specific exercises that are illustrated for the participant. Each participant interview is expected to take approximately 20 minutes. The answers to the questions will be transcribed on a data collection form completed by the DNP student.

A parallel set of semi-structured interviews will also be completed with the clinic providers in either an individual interview format or as a focus group, as best fits with practice flow, and led by the DNP student. These interview questions will focus on their perceptions of the home-based PA program, the potential fit of embedding instructions about the program into usual care at the clinic, and what type of delivery model for the exercise would best suit the clinic's and patients' needs. The expected amount of time for the group or individual interviews will be approximately 30 minutes, following informed consent, and including time for follow-up questions. Field notes will be written by the DNP student throughout the individual and/or focused group interviews.

D. Detailed Study Procedures

The Director of OSU THWC will compile information about the accessible DNP project population. The roster for patients scheduled to be seen in the THWC each week will be reviewed by the clinic receptionist staff to identify patients who meet the project eligibility

criteria based on gender and age (women, 40-70 years) only. The DNP student will be positioned in the THWC on days when the potentially eligible participants will be at the clinic.

1. Through a pre-determined script, the staff will ask a patient who meets the study inclusion criteria (gender and age) at check in if she is interested in speaking with the DNP student.

2. At this time if the patient is interested, the staff will direct them over to the student, who is positioned in the lobby, to discuss the project, or the if the patient is roomed, the DNP student will meet the patient in the room.

3. Introduce self to participant.

4. The DNP student will provide information about project including an explanation of the project purpose and information about the project participation activities.

5. Informed consent procedures, including addressing all questions of the participant as appropriate. Provide participant with a copy of the signed informed consent form.

6. Baseline data including age, any of the four chronic health conditions as self-reported by the participant, and TEAMcare status will be recorded.

7. Administer the questions regarding the benefits and barriers to PA.

8. Administer the Rapid Assessment of Physical Activity (RAPA) questionnaire to assess the participant's current PA level.

9. After viewing the graphics of the home-based PA program, semi-structured interview questions will be used to further explore participants' needs surrounding a home-based PA program. The answers to the questions will be transcribed on a data collection form completed by the DNP student.

    a. Would you be interested in doing the home-based PA program?
    b. (for each group of illustrated exercises) Do you feel you could do these exercises?
    c. How many days per week would you spend doing these exercises?
    d. How many minutes on those days would you spend doing these exercises?

10. Each consenting participant will receive a small token of appreciation in exchange for the time and effort required to complete the questionnaires and interviews. The participant will receive a pre-made packet demonstrating the home-based PA exercises and may also choose a water bottle or a stress ball. Each participant will receive this incentive even if they do not complete all the questionnaires and interview questions.

11. The pictorial home-based PA program will be reviewed with the THWC providers in either an individual or focused group setting. Field notes will be written by the DNP student throughout the individual and/or focused group interviews.

a. What are your thoughts regarding this home-based PA program?
b. How would you explain the exercises to your patients?
c. How would you incorporate education about this PA program into a patient's routine care visit?
d. Is there anything you would change regarding this home-based PA program that would enhance the likelihood that your patients would successfully use it?

E. Data Analysis

Data will be entered and analyzed using SPSS statistical analysis software.

Demographics, including age, participation in TEAMcare, and past medical history (high blood pressure, high blood sugar, high cholesterol, and depression) will be analyzed using mean, standard deviation, and frequency percentages in the applicable contexts.

The RAPA enables classification of participants based on the highest physical activity score reported on the RAPA questionnaire. Frequencies displayed as percentages for each physical activity category and strength and flexibility activities were summarized.

Selected questions from the EBBS representing each of the main (benefits and barriers) subscales and minor subscales were used. A sum score for each main subscale was created based on the benefits and barriers questions, respectively with the main analysis at the level of the individual items using descriptive statistics (mean and SD). Additionally, to summarize relationships between variables obtained throughout the participant interviews, cross-tabulations were conducted.

The semi-structured interviews conducted with each participant and clinic provider were recorded through narrative text and utilized for data analysis. For participant semi-structured interviews, descriptive statistics including frequencies displayed as percentages were used for questions 1 and 2 and the mean with standard deviation was assessed for questions 3 and 4. A line-by-line analysis of the transcribed semi-structured interviews with clinic providers was conducted. The key points and recommendations will be identified and recorded on a form. recorded on a form.

No personal identifiers will be associated with participant response.

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Appendix E

Participant Informed Consent Form

The Ohio State University Consent to Participate in Research

Study Title: Needs Assessment for a Home-based Physical Activity Program for Mid-life African American Women with Chronic Health Conditions in an Underserved Healthcare Setting: A Quality Improvement Project

Researcher: Celia E. Wills, Ph.D., R.N.

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.

Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose of the Study: The purpose of this project is to understand if a home-based physical activity (PA) program for underserved mid-life African American women with chronic conditions, such as high blood pressure, diabetes, high cholesterol, and diabetes, is acceptable and if it will fit for patients and staff at the Total Health & Wellness Clinic (THWC). You are being asked to participate in this project because you are a woman with one or more chronic health issues, are between 40 to 70 years old, and received TEAMcare healthcare services at the THWC.

Study tasks or procedures: You will be asked to answer some questions about your current physical activity, barriers and benefits to doing physical activity, and to give your thoughts on physical activities that could be done as part a home-based physical activity program. Specifically, you will answer some questions about things that would help you to do physical activity, and things that may get in the way of doing physical activity. Next, you will complete a questionnaire to find out how much physical activity you do currently. Then you will look at some pictures of people doing different types of physical activities at home, and answer a few questions about the pictures so that your needs and opinions can be understood for planning a home-based physical activity program.

Duration of participation and study withdrawal:

This project will take about 20 minutes to do.

You may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled.

Your decision will not affect your future relationship with The Ohio State University or the THWC.

Description of risks and benefits: There are no foreseeable risks to participating in this study.

Your participation will help patients and staff at the THWC. This study will help the THWC staff to better understand of the needs and preferences of patients. The information will be used to plan a home-based physical activity program that could be used by patients.

Confidentiality of participants' records: No personal identifiers such as your name or medical record number will be used. All information such as chronic illnesses will be self-reported by you. Efforts will be made to keep your study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
- The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

During and following the conclusion of the project, all project data and records will be stored in locked file cabinets and offices, password-protected on secure computers when stored electronically, and will be accessible only to project staff. The results of the project will appear in presentations and publications in aggregate form only and such that no individuals can be identified or linked to specific responses.

Incentives: For participating in the project, you will receive a sample packet of the home-based exercises and your choice of either a water bottle or stress ball. You will receive this incentive even if you do not complete all the questionnaires and interview questions.

Participants' rights:

You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled.

If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights you may have as a participant in this study.

Contacts and questions:

For questions, concerns, or complaints about the study, or you feel you have been harmed as a result of study participation, you may contact Celia E. Wills at wills.120@osu.edu or (614) 292-4699.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Signing the consent form:

I have read (or someone has read to me) this form and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form**.**

Printed name of subject	**Signature of subject**
	AM/PM
	Date and time
Printed name of person authorized to consent for subject (when applicable)	**Signature of person authorized to consent for subject (when applicable)**
	AM/PM
Relationship to the subject	**Date and time**

Investigator/Research Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent	**Signature of person obtaining consent**
	AM/PM
	Date and time

THWC Staff Informed Consent Forms

The Ohio State University Consent to Participate in Research

Study Title: Needs Assessment for a Home-based Physical Activity Program for Mid-life African American Women with Chronic Health Conditions in an Underserved Healthcare Setting: A Quality Improvement Project

Researcher: Celia E. Wills, Ph.D., R.N.

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.

Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose of the Study: The purpose of this project is to understand if a home-based physical activity (PA) program for underserved mid-life African American women with chronic conditions, such as high blood pressure, diabetes, high cholesterol, and diabetes, is acceptable and if it will fit for patients and staff at the Total Health & Wellness Clinic (THWC). You are being asked to participate in this project because you are staff at the THWC and are involved in TEAMcare at the THWC.

Study tasks or procedures: You will review some pictures of people doing different types of physical activities at home. In a group based setting, you will be asked to answer a few questions about the pictures, centered on your perceptions of the home-based PA program, the fit into usual care, and the best mode of delivery.

Duration of participation and study withdrawal:

This project will take about 30 minutes to do.

You may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with The Ohio State University or the THWC.

Description of risks and benefits: There are no foreseeable risks to participating in this study.

Your participation will help patients and staff at the THWC. This study will help the THWC staff to better understand of the needs and preferences of patients. The information will be used to plan a home-based physical activity program that could be used by patients.

Confidentiality of participants' records: No personal identifiers such as your name will be used. Efforts will be made to keep your study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
- The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

During and following the conclusion of the project, all project data and records will be stored in locked file cabinets and offices, password-protected on secure computers when stored electronically, and will be accessible only to project staff. The results of the project will appear in presentations and publications in aggregate form only and such that no individuals can be identified or linked to specific responses.

Incentives: There are no incentives provided.

Participants' rights:

You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled.

If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights you may have as a participant in this study.

Contacts and questions:

For questions, concerns, or complaints about the study, or you feel you have been harmed as a result of study participation, you may contact Celia E. Wills @ wills.120@osu.edu or (614) 292-4699.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Signing the consent form:

I have read (or someone has read to me) this form and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form**.**

Printed name of subject	**Signature of subject**
	AM/PM
	Date and time
Printed name of person authorized to consent for subject (when applicable)	**Signature of person authorized to consent for subject (when applicable)**
	AM/PM
Relationship to the subject	**Date and time**

Investigator/Research Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent	**Signature of person obtaining consent**
	AM/PM
	Date and time

Appendix F

Rapid Assessment of Physical Activity (RAPA)

Physical Activities are activities where you move and increase your heart rate above its resting rate, whether you do them for pleasure, work, or transportation. The following questions ask about the amount and intensity of physical activity you usually do. The intensity of the activity is related to the amount of energy you use to do these activities.

Examples of physical activity intensity levels:

<table>
<tr>
<td>Light activities
your heart beats slightly faster than normal
you can talk and sing</td>
<td> 
Walking Leisurely
 
Stretching
 
Vacuuming or Light Yard Work</td>
</tr>
<tr>
<td>Moderate activities
your heart beats faster than normal
you can talk but not sing</td>
<td> 
Fast Walking
 
Aerobics Class
 
Strength Training
 
Swimming Gently</td>
</tr>
<tr>
<td>Vigorous activities
your heart rate increases a lot
you can’t talk or your talking is broken up by large breaths</td>
<td> 
Stair Machine
 
Jogging or Running
 
Tennis, Racquetball, Pickleball or Badminton</td>
</tr>
</table>

How physically active are you? (Circle one answer on each line)

	Does this accurately describe you?	
I rarely or never do any physical activities.	Yes	No
I do some light or moderate physical activities, but not every week.	Yes	No
I do some light physical activity every week.	Yes	No
I do moderate physical activities every week, but less than 30 minutes a day or 5 days a week.	Yes	No
I do vigorous physical activities every week, but less than 20 minutes a day or 3 days a week.	Yes	No
I do 30 minutes or more a day of moderate physical activities, 5 or more days a week.	Yes	No
I do 20 minutes or more a day of vigorous physical activities, 3 or more days a week.	Yes	No
I do activities to increase muscle strength, such as lifting weights or calisthenics, once a week or more.	Yes	No
I do activities to improve flexibility, such as stretching or yoga, once a week or more.	Yes	No

Appendix G

Selected questions to evaluate benefits and barriers to exercise

DIRECTIONS: Below are statements that relate to ideas about exercise. Please indicate the degree to which you agree or disagree with the statements by circling SA for strongly agree, A for agree, D for disagree, or SD for strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I enjoy exercise.	SA	A	D	SD
2. Exercise decreases feelings of stress and tension for me.	SA	A	D	SD
3. Exercising takes too much of my time.	SA	A	D	SD
4. I will prevent heart attacks by exercising.	SA	A	D	SD
5. Exercise tires me.	SA	A	D	SD
6. Exercise increases my muscle strength.	SA	A	D	SD
7. Exercise gives me a sense of personal accomplishment.	SA	A	D	SD
8. Exercising lets me have contact with friends and persons I enjoy.	SA	A	D	SD
9. I am too embarrassed to exercise.	SA	A	D	SD
10. Exercising will keep me from having high blood pressure.	SA	A	D	SD
11. It costs too much to exercise.	SA	A	D	SD
12. I am fatigued by exercise.	SA	A	D	SD
13. My spouse (or significant other) does not encourage exercising.	SA	A	D	SD
14. Exercise increases my stamina.	SA	A	D	SD
15. Exercise improves my flexibility.	SA	A	D	SD
16. Exercise takes too much time from family relationships.	SA	A	D	SD

17. Exercising helps me sleep better at night.	SA	A	D	SD
18. Exercise helps me decrease fatigue.	SA	A	D	SD
19. Exercise allows me to carry out normal activities without becoming tired.	SA	A	D	SD
20. Exercise takes too much time from my family responsibilities.	SA	A	D	SD
21. Exercise is good entertainment for me.	SA	A	D	SD
22. Exercising increases my acceptance by others.	SA	A	D	SD
23. Exercise is hard work for me.	SA	A	D	SD
24. Exercise improves overall body functioning for me.	SA	A	D	SD
25. There are too few places for me to exercise.	SA	A	D	SD
26. Exercise improves the way my body looks.	SA	A	D	SD

Selected questions to evaluate benefits and barriers to exercise with alternate wording

DIRECTIONS: Below are statements that relate to ideas about exercise. Please indicate the degree to which you agree or disagree with the statements by circling SA for strongly agree, A for agree, D for disagree, or SD for strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I enjoy exercise.	SA	A	D	SD
2. Exercise decreases feelings of stress and tension for me.	SA	A	D	SD
(Exercise makes me feel less stressed out.)				
3. Exercising takes too much of my time.	SA	A	D	SD
4. I will prevent heart attacks by exercising.	SA	A	D	SD
(Exercise will help me not have a heart attack.)				
5. Exercise tires me.	SA	A	D	SD
(Exercise makes me tired.)				
6. Exercise increases my muscle strength.	SA	A	D	SD
(Exercise makes my muscles stronger.)				
7. Exercise gives me a sense of personal accomplishment.	SA	A	D	SD
(Exercise makes me feel like I met a goal.)				
8. Exercising lets me have contact with friends and persons I enjoy.	SA	A	D	SD
9. I am too embarrassed to exercise.	SA	A	D	SD
10. Exercising will keep me from having high blood pressure.	SA	A	D	SD
11. It costs too much to exercise.	SA	A	D	SD
12. I am fatigued by exercise.	SA	A	D	SD

(Exercise tires me.)

13. My spouse (or significant other) does not encourage exercising. SA A D SD

(By significant other, I mean friend or family member.)

14. Exercise increases my stamina. SA A D SD

(Exercise increases my energy.)

15. Exercise improves my flexibility. SA A D SD

(Exercise makes me bend and stretch easier.)

16. Exercise takes too much time from family relationships. SA A D SD

17. Exercising helps me sleep better at night. SA A D SD

18. Exercise helps me decrease fatigue. SA A D SD

(Exercise makes me less tired.)

19. Exercise allows me to carry out normal activities without becoming tired. SA A D SD

20. Exercise takes too much time from my family responsibilities. SA A D SD

21. Exercise is good entertainment for me. SA A D SD

(Exercise is fun for me.)

22. Exercising increases my acceptance by others. SA A D SD

(I fit in with other people better if I exercise.)

23. Exercise is hard work for me. SA A D SD

24. Exercise improves overall body functioning for me. SA A D SD

(Exercise makes my body work better.)

25. There are too few places for me to exercise. SA A D SD

(There are not enough places for me to exercise.)

26. Exercise improves the way my body looks. SA A D SD

(Exercise makes my body look better.)